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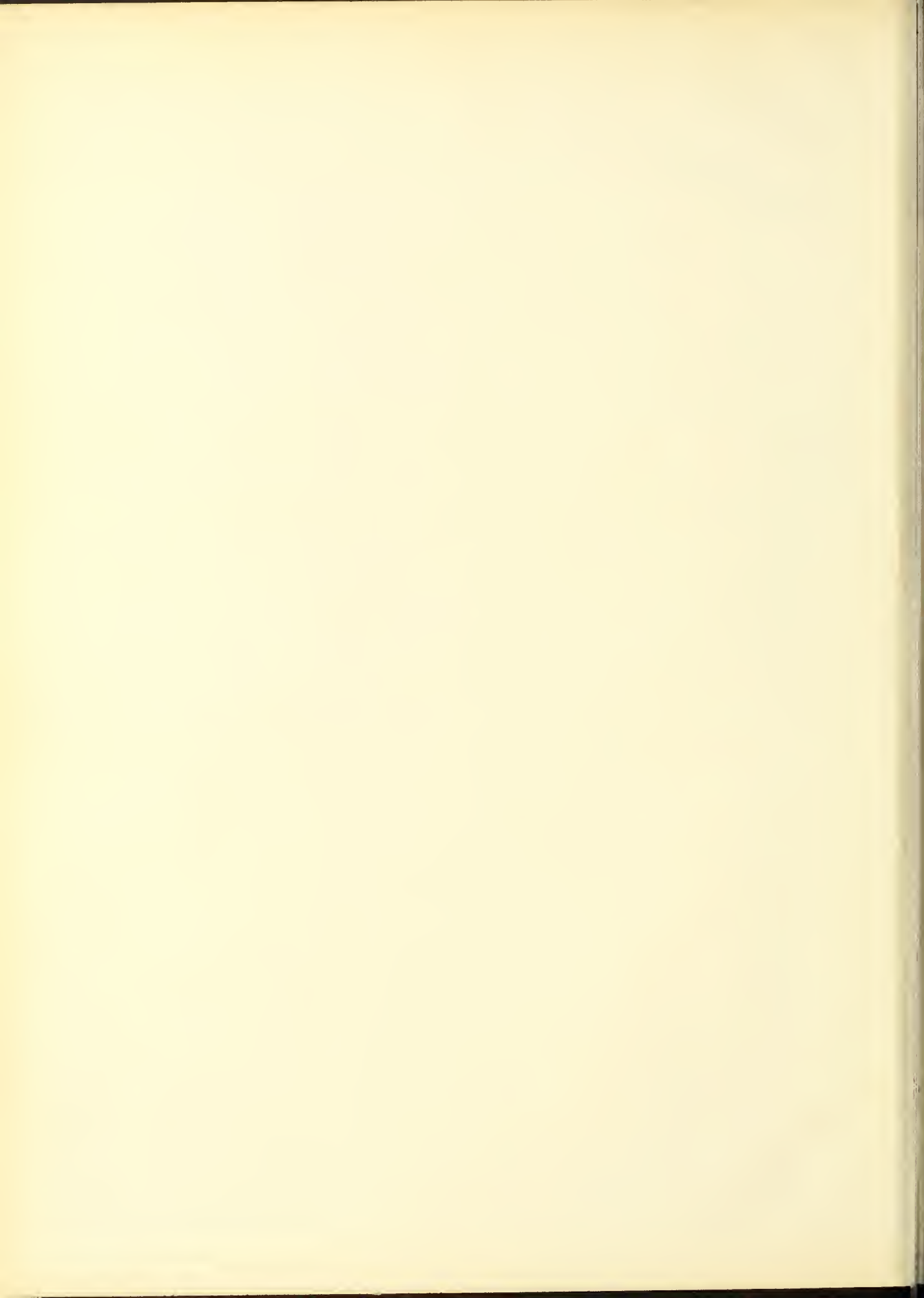
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THE JOURNAL

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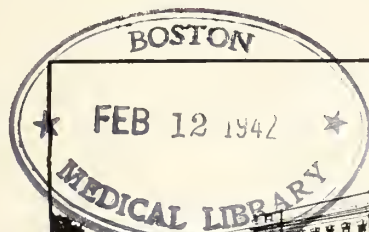
SOUTH CAROLINA

MEDICAL ASSOCIATION

GREENVILLE, SOUTH CAROLINA



JANUARY, 1942, VOL. XXXVIII, NO. 1



Medical College of the State of South Carolina, Charleston, S. C.

Are the Neuritic Symptoms of Pregnancy due to deficiency of Vitamin B₁ (thiamine)

SUCH neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and paralysis of the extremities may result from a shortage of the antineuritic vitamin, recent investigations appear to show. Strauss and McDonald report that polyneuritis of pregnancy is a dietary deficiency disorder similar to beriberi, responding to treatment with dried brewers' yeast, rich in vitamin B₁ (thiamine). Wechsler, Hirst, Luikart, Gustafson, and other authorities observe that the avitaminosis is probably the result of hyperemesis gravidarum.

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Some Historical Aspects of the Medical College of the State of South Carolina

ROBERT WILSON, M.D., DEAN
CHARLESTON, S. C.

There have been at various times three medical colleges in South Carolina. In 1824, organized under the auspices of the Medical Society of South Carolina, the Medical College of South Carolina began its career. Eight years later the Medical College of the State of South Carolina was chartered, and in 1867 the School of Medicine of the University of South Carolina was established. The latter school was short lived. Two years after its establishment the University was opened to both races and most of the faculty resigned.

The Medical College of South Carolina soon acquired a wide reputation due to the brilliant men who composed its faculty, and the classes increased rapidly. The five graduates of 1824 grew to 48 in 1831. At this time, however, the smoldering jealousies between the Medical Society and the college burst into active flame over the election of a successor to Dr. James Ramsay, the professor of surgery, who had resigned his chair. Unable to effect an agreement, the faculty withdrew in a body and established themselves in the old theatre at the corner of Broad and New Streets under the name of the Medical College of the State of South Carolina. The two medical schools continued in operation as separate institutions until 1839 when the Medical College of South Carolina, having failed to attract students in sufficient numbers to justify its further existence, merged with the Medical College of the State of South Carolina, and the old faculty reoc-

cupied their original quarters on Queen Street, the two faculties "again united in the bonds of peace and amity, and in prosecution of their common interests, usefulness and dignity."

From this time until the outbreak of the War Between the States the college enjoyed continued prosperity and increasing reputation. Some of the faculty had acquired continental and intercontinental distinction in medicine and in other branches of science. Holbrook and Moultrie and Elliott; Dickson and Frost; Prioleau and Ravenel; Agassiz, who after two years was called to Harvard; Geddings and Miles and Chisolm and Shepard; these are among the men who placed the college in the front rank of American medical schools. Moultrie, with his breadth of vision, as early as 1836 urged upon the college the course which has been followed in recent years under the guidance of the Council on Medical Education and Hospitals of the American Medical Association. He pointed out the need of adequate premedical training broad-based upon a classical education and a four year graded course of medical study in accordance with the procedure in the European medical schools.

It is worthy of note that in 1840 the faculty converted the theatre in which their teaching had been conducted into a hospital in order to secure facilities for bedside clinical instruction. The News & Courier called attention to this on September 3, 1840, saying:

"College Hospital, West end of Broad Street, (formerly the old Theatre) has been instituted by the Faculty of the Medical College, for the purpose of furnishing instruction at the bedsides of the sick, for Medical Students and the Annual Classes. It is now opened for the reception of patients, white and black, and those laboring under madness in its various forms. A ward for females, or an obstetrics ward is also established. Those selecting this asylum, may be assured of the utmost care in nursing and medical attendance. The wards are spacious and airy, and the location healthy and retired.

The medical department will be under the care of Dr. Frost.

The surgical under Dr. Geddings.

The obstetrics under Dr. Prioleau."

"This is one of the earliest, if not the earliest, instance in which a faculty of a medical college established a teaching hospital instead of the reverse, which is the more usual situation." (Dr. W. C. Davison).

Notwithstanding the exhaustion and poverty which followed the War Between the States, the college was reorganized and operated successfully. When reopened there were only five matriculants, but with indomitable will the faculty persevered, offering medical instruction free of charge on account of the poverty of the South.

Two efforts have been made to associate the college with the University of South Carolina, one in 1878, and again in 1911 under the presidency of Dr. S. C. Mitchell. Both of these attempts failed. Dr. Mitchell declined to accept the proposition of affiliation which was made. It was then decided to make an effort to induce the state to take over the college as a state institution. There was some objection on the part of older members of the faculty, but wiser counsel prevailed and the trustees accepted the advice. The success of this effort is well known. It was accomplished through the enthusiastic assistance of the whole profession of the state and the effective cooperation of Governor Blease. This occurred in February, 1913, and a few weeks later a whirlwind campaign was set up in Charleston to raise money for the construction of a new building opposite the Roper Hospital, where it would be in juxtaposition to the clinical work. The campaign was a success and the building which was begun immediately was completed and occupied in the fall. There was some sentimental regret

upon leaving the old building which had been the home of the college for more than three quarters of a century and whose amphitheatre, if walls could talk, might thrill us with tales of the eloquence of the brilliant coterie of men who formed the faculty in ante-bellum days, but regret was soon buried in pride in the new achievement which it was realized enabled the college to carry on its work much more successfully and efficiently.

The recent physical expansion made possible by alumni contributions, state appropriation, Federal assistance, and the generosity of a native son of South Carolina, Mr. Bernard M. Barnet, has provided ample and magnificent accommodations for the college activities of teaching and research. Entitled to special mention is the Alumni Memorial Clinic whose spacious quarters represent the fulfillment of a dream of many years and worthily commemorates the loyalty and devotion of the host of our alumni.

In the old days all teaching was carried on by practicing physicians and surgeons, but with the growth of medicine and the introduction of university ideals it has become necessary to employ instructors who devote their full time to teaching and research. It is recognized that research is an important function of a medical school and that teaching is much more effectively conducted in the atmosphere of original investigation. Furthermore the opportunities afforded for investigation impose upon the faculty an obligation to the public to use such opportunities for the advancement of medical knowledge. There are now twenty-nine full-time teachers upon the staff in addition to two teaching fellows, of whom five are employed in the clinical departments of medicine, surgery, obstetrics, and pediatrics. Important investigative work is being carried on in several departments, an account of which is given by Dr. J. I. Waring in this issue of The Journal.

The medical college has produced a long line of graduates who have occupied distinguished places in medicine. Some of its graduates also have attained distinction and made important contributions in other fields of science, notable among whom may be mentioned Dr. St. Julien Ravenel and Dr. J. Lawrence Smith.

Dr. Ravenel graduated in 1840, and after spending two years in further medical study in Paris returned to Charleston, but devoted himself to chemistry, especially to the field of agricultural chemistry. His discovery of the value of the phosphate deposits led to the development of the extensive industry which played so large a part in the rehabilitation of South Carolina after the War Between the States. Of especial interest at the present time was his building of the torpedo boat *Little David* in 1863, which associates him with the initiation of undersea warfare which has changed the character of modern war.

Dr. Smith, a fellow classmate, began to practice of medicine in Charleston in 1844 and shortly thereafter established the Charleston Medical & Surgical Journal and lectured on toxicology in his Alma Mater. He soon gave up medical practice and devoted himself to other fields of scientific endeavor. His work in meteorology and the character of soils affecting the culture of cotton was of such importance that it led to his appointment by Secretary Buchanan on a mission to Turkey upon the request of the Turkish government for the purpose of teaching the proper method

of cotton culture in Asia Minor. The Turkish government also gave him an appointment as mining engineer because of his valuable investigative work in mineralogy, which gave him a high rank among American men of science.

"Conscious of the heritage left by the men of medicine who during a century gave of their best for the upbuilding of the institution, the college authorities are striving to carry even higher and further its lustrous record.

"The Medical College is no local enterprise; it is the proud possession of the people of South Carolina. It was devised and is operated for the benefit of mankind and it has achieved wonderfully, at times in the face of very serious obstacles. It has been carried forward unceasingly and unselfishly through the loyal and practical devotion of the physicians and surgeons who from time to time have been entrusted with its welfare. In the Medical College, the State of South Carolina has an institution the standards of which are no less high than those in any other section of the scheme of education. Whatever the State gives to the Medical College is given to itself, to be increased many times." (The News & Courier, October 16, 1924).

NEWS ITEMS

Dr. Wilburn E. Saye has opened offices in the Physicians and Surgeons Building at 1515 Bull Street, Columbia, specializing in Neurology, Psychiatry, and Endocrinology. Dr. Saye was in the U. S. Navy two years, at the S. C. State Hospital three years, and with the Veteran's Administration sixteen years.

Dr. Percy D. Hay, Roentgenologist of Florence, received deserved publicity in the news papers recently for his invention of a new instrument, the Hay Roentgen Periscope, which is a great help to the roentgenologist in that it permits binocular vision of cavital or surface lesions during treatment. The instrument is manufactured by Picker Corporation.

Dr. Jennings K. Owens has recently established offices in Bennettsville.

Dr. Margaret Buckner has recently located at McColl.

Doctors Robert W. Leonard and C. H. Poole have opened offices in Spartanburg.

Believing that it is far wiser to be prepared than to be caught off guard the Board of Trustees of the State Hospital have made plans for air raid precautions, including bomb shelters, for the safety of the patients.

On December 13th, Dr. Robert B. Stith, Jr. of Florence, was married to Miss Finley Plunkett of Aiken, S. C.

Recent Activities at the Medical College

J. I. WARING, M.D.

During the last few months, the various departments of the College have been expanding into their new quarters and the new plant is in full operation, except in a few departments where the lack of materials has prevented furnishing the equipment. A call for physicians for the armed services of the country has depleted the staffs of several departments and the burden of work has consequently fallen back on fewer shoulders. Nevertheless, the teaching load is being fully carried and a considerable amount of investigative work is in progress.

Department of Medicine

Under the auspices of the Department of Medicine, there has been inaugurated a Monday afternoon Graduate Conference, at which members of the teaching staff discuss clinical and pathological questions. This is in addition to the usual Friday afternoon Pathological Conference, in which students and teachers participate. There is also a Saturday morning conference, at which cases from the hospital are presented to students and faculty. The College welcomes any physicians of the State, who might care to attend these meetings.

The Department of Medicine is continuing its study of the action of the sulfonamides in pneumonia and is attempting to work out some of the problems of sickle cell anemia.

Department of Surgery

Members of the Surgical Department are now busily engaged in helping to build up a store of sterile supplies for emergency use. Large amounts of blood plasma and intravenous solutions will be prepared and stored in various depots. Unneeded glassware is being requisitioned from all departments for this purpose. Separation of plasma and some of the storage will be in the College buildings.

Research activities are continuing. A study on "The Effects of Excessively Hot Laparotomy Pads in the Production of Peritoneal Adhesions" was published recently. A preliminary report on "Tissue Damage from Hot Injections" was presented at the American

College of Surgeons' meeting in November. Some new work on "Supplying Collateral Blood Supply to the Brain in Cerebral Thrombosis" will be reported at the Southeastern Surgical Congress in March. Experimental studies on nerve injuries and on bronchial closure are also in progress.

Clinical Pathology

The recent development in the building program has added considerably to the space occupied and facilities of the laboratories of Clinical Pathology. This has been necessary, due to the expansion of the student body and the increase of laboratory work required these days for patients of the Hospital and Out-Patient Department.

During the past year, Dr. H. H. Walker of Memphis, Tenn. and Dr. John H. Murdoch of Charleston, S. C., have been added as assistants to the laboratory staff, as well as several technicians. Unfortunately, we have had to relinquish Dr. Walker to the Medical Department of the U. S. Navy and, so far, his position at the College is unfilled.

Commencing the first of July, the Medical College has taken over the training of laboratory technicians, as there is a large demand for well-trained technicians for public and private medical laboratories throughout the country. Requirements for admission for this course are about the same as those for admission of medical students. The course covers a period of eighteen months, including technical laboratory training in Clinical Pathology, Bacteriology, Histopathology, Radiology and Electrocardiography, Biochemistry, and Serology. Information and application for taking this course should be sent to Dr. Francis B. Johnson, Director of Training School for Laboratory Technicians.

Department of Pathology

Two positions authorized in the Department of Pathology are now vacant on account of the medico-military emergency.

The department is now expanding into the new construction, which will adequately pro-

vide teaching, technical and private laboratories for all essential purposes. On account of scarcity of materials and fixtures, it will probably be some time before full equipment of all of the teaching rooms can be completed.

In addition to the regular courses of instruction, the department offers one of the best pathology training services, with a large and varied autopsy and surgical pathology experience.

To the present, the publications of the staff number more than one hundred papers and two books, while four medals for research work have been awarded it.

Research is considered a function of first importance and several problems are currently under investigation, including questions in pulmonary dust diseases, chronic mastitis, and lymphoid reactions in cancer.

Department of Anatomy

The freshman class has been increased by six, giving a total enrollment of fifty students for the Department of Anatomy. The new quarters include refrigerated storage for cadavers and a fluorescent lighting system in the gross dissection laboratory. Neurologic investigative work on the hypothalamus, pons and pyramidal tract is being carried out by the members of the department. A grant from the Council of Scientific Research of the American Medical Association has been received and is being used for further investigation of the pyramidal system. G. L. Rasmussen, instructor in Anatomy, recently received his Ph.D. from the University of Minnesota.

Department of Pharmacology and Materia Medica

In addition to its usual teaching, the Pharmacology Department is engaged in several activities:

Dr. Zeigler is studying the toxic effects of the oxalates.

Dr. Stoneburg and Dr. Martin are engaged in an investigation on the chemical character of an oil obtained from the fruits of *Melia Azedarach* L. (the China berry) and also the physiological effects of that oil. Dr. Martin is also investigating the chemical constituents of the seeds of *Erythrina herbacea* L., which have been reported to possess a curarelike

action, and is preparing a paper on the poisonous plants of the vicinity of Charleston.

Dr. Hoch is studying the possibilities of the local production of essential drugs and making a survey of native drug resources of the state for the National Defense Council. He is also working on the isolation and study of pharmacologically active derivatives of indigenous flora.

Dr. Prout in collaboration with Dr. Harris of the Bacteriology Department has just completed a study of silica gel in ointment bases, which will appear in the next Journal of the American Pharmaceutical Association. Their next project is the study of Bentonite as an ointment base.

Obstetrics

The Obstetrical Department handled in 1939 a total of 1766 births, 823 on the in-patient service and 943 on the out-patient service.

In 1940, there were a total of 1812 births, 879 on the in-patient service and 933 on the out-patient service.

Births during 1941, it appears now, will run well over 2000.

The loss of two Residents to the service is keeping the rest of the staff very busy and has increased the clinical work of the students considerably.

Eclampsia, of which there have been about 20 cases a year in the past, does not appear now to be increasing, although the county prenatal clinics show an increase in patients with a definite shortage of professional personnel. The department also handled about 60 cases of severe, pre-eclamptic toxemia a year.

Department of Physiology

For the last two years, because of the illness of Mr. Richardson, the department has been unable to do a great amount of research work. Still, one paper this year, and last year two papers, were published. In November, Dr. Wager came to take the place of Mr. Richardson, who resigned the first of the year, and after Christmas the department, we trust, will have time for continuing research already begun, and a new line of investigation already planned.

Dr. Kinard will continue his investigation of "The Suitability of Tungsten as an X-ray

Contrast Medium." This involves a consideration of the toxicity of tungsten metal and its salts, methods of administration, tracing of the routes of excretion, and storage in the reticulo-endothelial system.

Dr. Wager is already preparing to institute research on "Étiotropic Drugs -Bacteriostatic," in an effort to find a satisfactory specific non-toxic bacteriostatic drug. As yet, no single agent has been found, which qualifies or even approaches the medical Utopia, or "Therapia Magna Sterilans." Sulfanilamide and its derivatives and modifications have enjoyed considerable success, but unfortunately, not without many qualifications.

The application of the principle of vinylogy offers an interesting research problem in an effort to sidestep the toxic actions. The results of preliminary investigation of efforts in this direction are not negative in character. Preliminary work offers such encouragement that continuance becomes almost obligatory.

The department lends itself in every possible way for cooperation with defense preparations. For example, it will assist, as opportunity offers, in establishing an increasing number of blood-banks in South Carolina hospitals and other centers. The services of every man in the department have been offered to the Government.

School of Nursing

To aid in the national emergency, fifteen additional students were admitted to the September class over the usual number. The class has responded well to making adjustments necessary to so large a group. It is expected that a very high percent of this group will be retained to be graduated. A large class is to be admitted in January, both to meet national needs and to serve the ever-increasing demands for nursing service in this country.

Records of bedside teaching have been kept for about three years. They show that each student receives no less than thirty hours of applied study at the bedside during her three-year course.

Students have been invited to several staff conferences with the graduate nurses when

moving pictures, demonstrations and lectures of value have been available.

Twenty-one graduate nurses passed the November, 1941 State Board Examinations with very creditable ratings.

Accreditation—The school has applied for accreditation by the National League of Nursing Education Committee on Accreditation. It is anticipated that the study will be made early in January and that the school will be placed on the newly-made list of schools approved on a professional basis. This study is in no way to be confused with the state accreditation, which entitles students to become registered nurses.

To insure the graduate staff the privilege of keeping up to date on all current events with nursing implication, a conference is held three times a month. The needs of student nurses are stressed.

A Refresher Course for graduate inactive nurses is being given. These women are spending six weeks both in class and on the wards to be thoroughly familiar with Roper Hospital methods, so that in case of war emergency, patients may receive the best possible care.

A course is given to W. P. A. Workers, who wish to serve as trained attendants, in case of war emergency.

A course is given to N. Y. W. Workers, who wish to serve in case of war emergency.

The three courses are under the supervision of the Education Department and are especially adapted to the needs and ability of each person taking the classes.

Department of Bacteriology

Studies have been made on a satisfactory technique for delayed typing of pneumococci.

Encouraging studies are also in process in connection with the significance of the streptococci of the mouth in the production of dental cavities.

Dr. Harris has been working on the question of the production of an inexpensive satisfactory germicide which might be made available for use in obstetrics, and particularly for use by the midwives of the state. This investigation is being made at the request of the Committee on Maternal Welfare of the State Association.

Studies have also been made in the culturing of the dysentery and salmonella organisms.

Department of Nutrition

Several courses of instruction have been organized by the county workers, in connection with the State Committee on Nutrition. Work on the nutritional aspect of goiter in rats is being continued.

This department expects to have available very soon, an Evelyn Photo-Colorimeter, with which estimation of the vitamin content of foods and body fluids may be made.

Department of Chemistry

Members of this department have been working in conjunction with other depart-

ments on studies in sickle cell anemia, on tungsten and on silicosis. There has also been in progress for some time, a study of the fluorine content of water from various parts of the state.

Library

The Library has secured a moderate number of new books and has made a few changes in its general arrangement. Some cubicles have been built in the back portion of the Library, in order to afford privacy to the students. The Library will have the use of a portion of the wing of the new auditorium, which has not yet been completed, because of inability of the contractor to secure certain materials.

Cervical Arthritis

OLIN B. CHAMBERLAIN, M.D.
CHARLESTON, S. C.

The relation of degenerative and traumatic arthritis to pains in the head, neck and upper extremities has been receiving more attention the past few years. The nature and general characteristics of these pains indicate that they are of radicular origin, that is, they arise from irritation of the posterior spinal roots. For this reason they have a segmental type of distribution, unlike the neuritic types of pain with their distribution along the course of a peripheral nerve. Radicular pains are characteristically seen in neoplasms of the vertebrae and extradural growths. In these conditions their genesis is plain. Not so well recognized, however, has been the fact that arthritic changes in the vertebrae, or soft tissue lesions which precede the actual bony changes, may cause definite pain and parasthetic syndromes.

For a number of years various observers have called attention to this possibility. Von Bechterew and Strumpell, writing in Germany in 1893 and '97 respectively and Pierre Marie in France in 1898, first described the condition. However, the lack of X-ray limited their cases to far advanced ones. In America the first authoritative paper was by Percival Bailey and

Louis Casamajor in 1911. It was entitled "Osteo arthritis of the spine as a cause of compression of the spinal cord and its roots." This paper dealt with the entire spine, and was interested mainly in severe and exaggerated cases, with the production of atrophies and paralysees.

During the past few years several clinicians have drawn attention to what is apparently a relatively neglected condition, namely syndromes arising from cervical arthritis. Some of the neglect has arisen from the fact that minimal arthritis of the spine is a very common finding in adults over forty, and for this reason many are prone to look rather skeptically upon syndromes which are blamed upon these frequently encountered changes. However, the present conception of the genesis of low back pain and sciatica rests squarely upon pathological changes in the lumbo-sacral-pelvic juncture. To quote Exume Walker in a recent resume, "The fundamental mechanisms producing the sciatic syndrome is mechanical compression of the lower lumbar or sacral spinal nerves within the spinal canal." He then proceeds to depict a number of pathological methods by which this compression can take place. Among these, of course, is the obvious compression which

(Read before S. C. Medical Association, Greenville, April, 1941.)

arises from osteo-arthritis causing pressure upon, or irritation of the nerve roots. In parallel argument, this paper attempts to point out that the compression and irritation phenomena arising in the cervical spinal roots from hypertrophic, degenerative, or traumatic arthritis will and does bring about syndromes of pain in the head, neck, and arms.

The pain produced by root irritation is spoken of as radicular pain and it has a somewhat segmental type of distribution. Syndromes arising from irritation of the cervical roots find distribution either on or in the head, as headache, and on the shoulders and arms where they are usually labelled neuritis and frequently attributed to lesions in the shoulder joint. Considering the radicular distribution of the first three cervical spinal nerves, one finds that the first cervical is, in its posterior or sensory branch often absent or very rudimentary, and it therefore can be omitted from consideration. The second and third cervical nerves are represented, in a sensory function, in the occipital region, extending up to the vertex. Irritation of these upper roots may be expected to produce headaches, mainly of an occipital type. It is believed by the writer that these headaches are of frequent occurrence in the middle-aged or osteo-arthritic group of patients. This subject has, as far as the usual text books go, been very much neglected, although indurative and rheumatic headaches are sometimes described in rather vague manner. More notice has been taken lately however. Hartsack, in the March 1940 number of the Medical Clinics of North America has drawn attention to headaches due to cervical arthritis. He comments upon the fact that they are so often faultily ascribed to other causes. I quote "In the osteoarthritic age group this form of headache ranks in frequency with ocular and migraine headaches." Headache which is characteristic of arthritis of the cervical spine is chronic in type. It may come on in sieges and last for days. It may be recurrent with considerable lapses in between. In many cases there is a definite daily periodicity, the headache waking the patient from sleep, or, milder, being present on awaking, and tending to grow less after arising. Since this particular

characteristic is also found in hypertensive headaches, which are prone to occur in the same age group, many headaches in individuals with moderately increased vascular tension are labelled hypertensive when they should be more correctly ascribed to changes in the cervical spine. Perhaps, in all fairness the opposite may be true. The pain almost invariably begins in the occiput and tends to spread upward and forward. There is a marked tendency for the pain to finally become temporal and to seem to involve the eyeballs. We might pause from a description of the syndrome to hazard a reason for this pain in the temples and eyes. As pointed out earlier in this paper pain arising from irritation to the sensory roots of the second and third cervical nerves should be limited to the back of the head. However, recourse to neuro-anatomical texts will reveal the fact that the fifth cranial nerve, which as is well known supplies, in a sensory fashion the structures on the anterior aspect of the head, has an extraordinarily long sensory nucleus which runs down the brain stem into the upper cervical cord.

It seems logical to postulate therefore that the ocular and temporal pains which form a part of the type of headache under description, are referred pains, and explainable upon the same general theses upon which we explain arm pains in angina pectoris.

The individual suffering from an arthritic headache is quite cognizant of neckache. He often bends his neck back, or wants it rubbed. There is almost a characteristic gesture of bending the head back and stroking the neck with the palm of the hand, thereby securing temporary surcease of discomfort. The attachment of the neck muscles to the occiput seem particularly tender, and most patients have learned that heat and massage are helpful.

Exposure to drafts is often a precipitating factor in causing arthritic headaches. Sitting with the head in a stiffly upright position may play a part. Driving a car for long distances is a prolific source of trouble. If there is eye muscle error, or astigmatic error, the associated muscle-balance strain seems particularly prone to bring on a headache.

So much for a brief resume of some of the

salient points connected with headaches originating from irritation of the upper cervical nerve roots.

Let us now describe the clinical symptoms which may arise when the lower cervical roots are compressed or irritated. Consideration of the neuroanatomy involved will recall the fact that the radicular sensory distribution of the lower five cervical nerves is the neck, shoulders, and the upper extremities. (Graphic representation on the lantern slide makes this obvious.) Painful shoulders or aching and soreness on the outer side of the neck, and pain, aching, and stiffness up and down the back of the neck were described. Pain radiating down the outer side of the arms, often to the thumbs was part of the picture, and occasionally paresthesia in the fingers in the form of tingling and numbness was present. The cardinal symptoms were pain, aching and soreness. Three case histories are here introduced.

(1) Miss F., an artist of 55 years, presented herself with the complaint of "pain in neck and shoulders and arms." Pain had been present off and on for about a year: During the month before she came in, it had been much worse and was now causing her much discomfort. She felt that exertion or posture had much influence on the pain. It was not present at night, but began to appear about midday. She could get relief by lying down. The pains were of an aching type. They seemed to involve the shoulders and upper arms mainly, but extended down into the forearms, and at times into the hands. Both sides were involved. Manipulation of the arms and shoulders did not accentuate the pain. Except for the symptoms as enumerated, she was a healthy woman who worked steadily as a portrait painter.

Examination was essentially negative. Her cardio-vascular-renal system was in good condition. Neurological examination gave meagre findings. There were no atrophies nor abnormal kinetic phenomena in the upper extremities. Coordination was good. The tendon reflexes were physiological.

Sensory study revealed little. Over-extension and forced movements of the shoulder joints produced some pain. Tactile sensibility and the other modalities unimpaired. Among

other laboratory studies, she was sent for an X-ray of the cervical and upper dorsal vertebrae. The report is as follows: "There is a definite narrowing of the intervertebral space between the fifth and sixth cervical vertebrae. There is also a slight forward displacement of the upper four cervical vertebrae on the fifth. There is beginning hypertrophic arthritis of these cervical vertebrae."

Impression: The evidence would indicate some previous injury to the cervical spine, with residual changes and hypertrophic arthritis."

Case No. 2. Mrs. D., a married woman of 40, was seen October, 1939. For two months she had been having painful and unusual sensations in the left hand and forearm. There was a feeling of numbness, along with loss of strength. At times there was an aching pain. These sensations came on at night, after she had slept a few hours. She would go to bed feeling quite well. Sometime during the night she would awake with the symptoms. If she arose and sat up in a chair they would leave her. This patient was of a rather tense, emotional type and there was obviously some panic associated with the syndrome. Inquiry into the past history brought out the interesting fact that about two years ago she had had a similar experience with the right hand. She had gone to several physicians who had made the diagnosis of neuritis. Various foci of infection had been removed. After some months the right hand had gradually gotten better and now it did not trouble her at all.

Examination was not very helpful. She was a rather stout woman with pendulous breasts and abdomen. Her blood pressure was 128/80 and her heart negative. Laboratory examinations were negative. Her metabolic rate was slightly low.

Neurological examination showed no atrophy nor tremors. There were no clear cut sensory changes. The hand "feels perfectly all right now but tonight when I wake up it will feel tingling and numb." X-ray report of the cervical spine: "Four views of the cervical spine and upper two or three dorsal vertebrae reveal a very definite hypertrophic arthritis of the lower cervical vertebrae. In addition, there is some evidence of calcification of the cartilages

between the articular facets of the third, fourth, fifth, and sixth cervical vertebrae."

Case No. 3. Mrs. R., 61 years of age, came in January 31, 1940, with a history of two years duration. She first noticed an aching sensation in the left shoulder. This had slowly progressed and the entire left arm was involved. The left hand felt numb and in particular the index finger. During the past month the right arm and hand were becoming involved. She had a great many headaches, particularly upon arising in the morning. This patient was of an emotional makeup and her subjective account was doubtless colored and exaggerated. Apparently several physicians had insisted that she was hysterical about herself and this had aroused her ire. Prior to the onset of her present symptoms she had been reasonably well, and attending to her household duties. It has always seemed to me a fairly safe rule to be unwilling to make a diagnosis of hysteria or functional nervous disorder when the symptoms appear for the first time relatively late in life.

Physical examination, as in the former cases, did not yield many helpful signs. This patient was tender along the cervical spines and head movements elicited pain. This sign was not found in the two cases formerly cited.

Neurological examination showed no atrophies nor tremors. No definite sensory changes could be elicited. She was sent to the X-ray department and reported upon as follows: "Two views of the cervical spine reveal a hypertrophic arthritis of moderate degree. Multiple views of the lower thoracic and lumbar spine reveal a beginning hypertrophic arthritis and rotatory scoliosis to the left."

A brief statement about the treatment of these cases is in order. Much can be done to improve the situation. Each case must be thoroughly studied and treated individually, of course, but there are certain generalizations which may be made.

Correction of muscle habits and strained positions, attention to visual defects and working postures is worthwhile.

Local physio-therapeutic measures—as massage—and various forms of heat should be

used. In many cases the orthopedist may render valuable aid.

To combat the underlying hypertrophic arthritis, of which the cervical changes may be only a part, the best procedure is along the line of metabolic correction. Basal rates are frequently low—carbohydrate intake excessive. At times menopause may play a part.

Obvious foci of infection may be removed, but there are few clinicians who still regard degenerative arthritis as being caused by focal infection. Therefore most work in that particular direction is apt to be futile.

Finally the removal of the patient's dread that he has a tumor of the brain, or is about to become uremic, or have a stroke relaxes him considerably and doubtless acts as an efficient psycho-therapeutic aid.

DISCUSSION

DR. J. WARREN WHITE, GREENVILLE:

Mr. President, I am sorry there are not more physicians here to listen to this exposition and enjoy the scholarly way in which it was given. I was interested particularly in Dr. Chamberlain's anatomical explanation of the condition. There is one point on which I did not quite agree with him, and that is a quotation from Dr. Walker. He said he thought the trouble was within the spinal canal. It seems to me as though it were at the intervertebral foramina. That is where the calcifications develop—in the margins and upper portion of the foramina.

It is interesting to note the close analogy between this condition and sciatica. Dr. Dawson's paper, later on in this session, will take up the other end of the spine, and the two will work in very well together.

I am glad that Dr. Chamberlain did not stress the association of dental conditions with this form of arthritis. So often people come to a physician's office with most of their teeth removed and yet they are not any better. I am still of the opinion, as a good many of you know, that the teeth should be taken care of on their own account, more than for their effect on a remote part. Of course, if there is obvious sepsis there it should be taken care of, but I have seen very few cases which I thought were benefited by the removal of teeth.

The medicolegal aspect of this condition is interesting. These people are very vulnerable, and infinitesimally small trauma can cause damage and prolonged disability out of all proportion to the severity of the injury.

As to treatment, I think the most important part of it is rest, which is so important in all our cases, particularly of the arthritic type. Manipulative procedures, of course, have been done. Dr. Frederick

A. Jostes, of St. Louis, has done a good deal of that manner of treatment. I think it ought to be done only by a man who has had a good deal of experience with it.

These people frequently claim that they feel better when they are up and around. I think it is analogous to an inflamed eye. The more you rub it the better it feels, for a few minutes but only for these few minutes. So it is with the arthritis. To get up and walk around may relieve the sore neck for a while but the pain later returns to a greater degree. Rest is very important in this condition.

We should X-ray all these cases, to be sure there is no destructive lesion developing. Another thing about X-rays; don't be too concerned about their appearance. I often see roentgenograms of individuals with extreme changes involving the spine, yet living a perfectly normal existence, save for avoiding extremes of motion and excessive activity.

Here is the X-ray of another case (the lady is just coming in the hall now), in which there are relatively small osteoarthritic changes, yet she is most uncomfortable. This is a lady who has had cervical pain, with the referred arm pains, coming on without a trauma. The other day we put on this modified felt Thomas collar, simply fastening it around her neck, as you see here. She has felt a good deal of relief, so her daughter told me this morning over the telephone, since it has been worn. I hoped she would wear it this morning, but it does make her a little conspicuous, you see. The collar holds her quite satisfactorily and gives her the necessary protection and rest.

I just wanted to demonstrate that simple apparatus and emphasize the importance of rest. (Dr. White demonstrates a felt Thomas collar.) These people do hurt very severely. In spite of terrible X-rays they do improve and a hopeless prognosis is not justified.

DR. A. T. MOORE, COLUMBIA:

Gentlemen, like Dr. White, I am sorry there were not more here to have heard Dr. Chamberlain's very splendid paper.

I should like to emphasize just a few practical points in the treatment of arthritis of the cervical spine. I agree, of course, with everything that has been said previously, and this is just a matter of bringing out a few of the practical points.

The first point I wish to mention is prevention of deformity, which I think is very important. We see so many old cases come in with the neck bent far forward due to lack of proper support. The body has a natural inclination to go forward, and in any arthritis of the spine the forward curvature becomes worse. We should think of preventive treatment. It is too late after ankylosis has taken place. When deformity has occurred, muscle strain produces as much pain as the arthritis itself.

For local treatment frequently all that is neces-

sary is a period of bed rest with possibly head traction. Not infrequently a plaster cast may have to be worn for a few weeks. The cast should support the occiput and chin and should extend down to and include the pelvis. Just a simple collar is not enough.

I was very glad Dr. White showed the collar support he devised for his case. It is easy to make, and it is surprising how much comfort it gives the patient and how much it relieves the pain. Recently Dr. White was in Columbia and we made one out of sponge rubber with an Ace bandage.

There are so many causes for arthritis that at times it may be necessary to have the services of men representing almost every branch of medicine. The points of treatment outstanding in my mind are rest, physical therapy and a high intake of the food accessories—especially vitamins A and D.

An extreme type of treatment may sometimes be necessary. That is operative treatment. I have a patient now who is having agonizing pain. He says he can stand pain but not agony. He has agonizing pain on every movement of the head day and night. Resection of the cervical nerves has been suggested by a neurologist. This operation exposes the spinal cord and is very extensive. When there is very slight motion and severe pain a bone grafting operation to immobilize the spine is not severely shocking and should give relief. For upper cervical involvement, the graft may be extended from the base of the skull to the cervical spine.

Again, I wish to congratulate Dr. Chamberlain on his very fine paper.

DR. CHAMBERLAIN, closing the discussion:

I wish to thank Dr. White and Dr. Moore for discussing my paper. I think the discussion by two orthopedic surgeons helps to enforce what I tried to point out, and that is that the proper time to treat these cases is in the incipency. After they have progressed to considerable deformity and a degree of marked bony changes, about all one can do is to give rest and some kind of collar. When chronic headaches in the back of the head are recognized as being of arthritic origin we should begin treatment and not wait until the cases have reached the point of deformity. Therefore I think the problem lies squarely in the sphere of the internist; investigation work should be done early, and methods are available for correcting the situation before it gets too far along.

In regard to Dr. White's reference to Exum Walker's quotation, the quotation is accurate, but the comment is also accurate. I think the description should be widened to include the intervertebral foramina. That is the important point—that the cervical sensory roots, before they get out of the foramina and form nerves, may be pressed upon by various bony and soft tissue changes.

I thank you.

damage, associated with increased capillary permeability. There is then a further loss of plasma (and protein) from the blood stream, a further increase in the oligemia, and a vicious circle occurs, finally resulting in death.

There are other associated changes which occur in shock, but the importance of some of them is not yet understood.

There occurs a reduction in the serum proteins as a result of the loss of plasma or whole blood. Hypoproteinemia seriously affects adversely the osmotic pressure of the blood.

There are a decrease in the basal metabolism and a decline in body temperature.

Hyperpotassemia occurs presumably as a result of the liberation of potassium on hemolysis of red blood cells, and as a result of impaired viability of other cells, in the presence of anoxia. Hyperpotassemia in itself can cause shock and death, but there are few who believe that it is a primary initiating factor in shock rather than a secondary factor.

Overaction of the adrenal medulla occurs in shock, with secondary overaction of the sympathetic nervous system and hence vasoconstriction. Excessive epinephrine injections may produce shock and death, but the autopsy findings differ in these from those cases of shock resulting from hemorrhage and trauma, and there are few who believe overaction of the adrenal medulla is a primary factor in shock.

The influence of the adrenal cortical hormone in shock is not yet clear.

The search for some tissue metabolite, possibly one of the choline compounds but not histamine, which may be active in shock, continues.

In addition to the loss of blood and plasma from the blood stream as a cause of shock, it is further generally recognized that, in order to account for the various types of shock encountered clinically, there must be other factors which may bring about a decrease in the effective circulating blood volume. For instance, the fall in blood pressure accompanying ordinary syncope must be initiated by a different factor from that causing the fall in blood pressure in the patient with a fracture of the shaft of the femur with extensive damage to the soft tissues of the thigh, or the patient

who has had a large external or internal gross hemorrhage.

Thus, Blalock has proposed a new classification of shock, or peripheral circulatory failure, which takes into account different initiating factors which may lead to a reduction in the effective circulating blood volume. The older classification of primary and secondary has been discarded because it has been learned that time is not a deciding factor in the development of shock.

Blalock's classification is as follows:

- I Hematogenic Shock
- II Neurogenic Shock
- III Vasogenic Shock
- IV Cardiogenic Shock
- V Combinations of the above and possible other unknown types.

Hematogenic shock is that type which follows large hemorrhage, extensive burns, and mechanical damage to tissues, and many other conditions, in any or all of which there is the loss of whole blood or plasma or both. In this type of shock there is an actual diminution in the blood volume. There is a primary decrease in the cardiac output and the fall in blood pressure is secondary. It is exceedingly important to remember that in this type of shock, various adverse changes in the circulation are taking place before the characteristic picture of shock develops. It has been shown by many observers that in the development of shock, the fall in blood pressure is the last change to occur. It must be realized that a preliminary stage, which may be called impending or incipient shock, exists before the characteristic picture associated with low arterial pressure is apparent. Furthermore, it must be remembered that we must learn to recognize this preliminary stage if the shock is to be treated most successfully. Blood pressure determinations alone are a very poor guide to the state of circulation, both during the development of and the recovery from shock. Aside from clinical observation, the more accurate methods of blood volume determination and the presence or absence of hemoconcentration by red blood cell counts, serum and plasma protein determinations, hematocrit readings, and specific gravity de-

terminations of the whole blood and plasma by the falling drop method are already coming into practical use in the diagnosis of incipient shock and hence its most successful treatment. The treatment in this type of shock is obviously restoration of the blood volume with whole blood or one of the blood substitutes. It has already been noted that in this type of shock vasoconstriction occurs as a compensatory measure. Hence vasoconstrictors are not indicated and there has been some evidence produced that their administration may actually do more harm than good.

Neurogenic shock is that type which accompanies syncope or follows a blow on the solar plexus or spinal anaesthesia. In this type, there is no actual decrease in the blood volume but rather a relative decrease due to the dilatation of the vascular bed. There is resultant primary fall in the blood pressure and a secondary fall in the cardiac output. In this type of shock the administration of vasoconstrictors is indicated to correct the primary vascular dilatation.

Vasogenic shock is that type which follows the injection of histamine or other tissue metabolites and as far as is known does not occur clinically. In this type reduction in the blood volume is only relative due to an increase in the size of the vascular bed. The fall in blood pressure is primary and the decrease in the cardiac output is secondary.

Cardiogenic shock is that type which occurs in hemopericardium, pericardial effusion, and constrictive pericarditis. In this type there is

a primary decrease in the cardiac output due to the obstruction to the return flow of blood to the heart. The fall in blood pressure is secondary. The treatment is obviously the removal of the obstruction to the return flow of blood to the heart.

SUMMARY

1. Shock or peripheral circulatory failure is defined.
2. The older theories of shock are mentioned, and in particular some of the evidences against the traumatic toxemia theory are enumerated.
3. The theory of the local loss of whole blood or plasma or both as a cause of shock is expounded.
4. The pathologic physiology of the circulation in shock and associated changes are reviewed.
5. Blalock's classification of peripheral circulatory failure is presented.
6. The existence of an impending or incipient stage before the appearance of the characteristic clinical picture of shock is stressed.
7. The treatment of the different types of shock are very briefly commented upon.

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This is the first question many physicians ask the detail man, when a new product is presented.

If the detail man answers, "No," the doctor saves time by saying, "Come around again when the Council accepts your product."

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Secretary's Page

The secretary's office is not merely a cash register. It is essentially a clearing house for information. From individual members of the Association, from local and district societies, from the Council and from the state association, from national medical organizations and the American Medical Association, from the national and state offices of civilian defense, from other medical associations and Journals— from these sources and others information comes to the secretary's office. This information is gathered and digested. It is then sent out to the members of the Association, to other organizations, to local and national medical organizations, to the press, to the committee on Medical Preparedness and to such other individuals or groups who send in their requests.

It is obvious that the secretary's office cannot function as it should without the aid of the members of the Association and of the local county and state officers in assembling this information.

With this in view the secretary submits the following suggestions to each member of the Association, asking his fullest cooperation.

PERSONAL DATA

Shortly, questionnaires will be mailed to each member of the Association asking for essential data. The information secured will be of inestimable value to the secretary and will save both time and correspondence. Please fill out the questionnaire the day it is received and return it forthwith.

MILITARY SERVICE

With more and more physicians entering military service it becomes more and more difficult to keep an up-to-date list of our members in the Army and Navy. If you are called into uniform please notify this office at once. Also, give your new mailing address if you desire the Journal sent to you.

MEMBERSHIP CARDS

Upon receipt of his annual dues the secretary will mail a membership card to each physician within forty-eight hours. If you do not receive this membership card within a few days after you pay your dues please see your local county society treasurer or else write directly to this office. Lists of paid members are furnished to the American Medical Association at stated intervals and we are anxious to keep this list up-to-date at all times.

MEDICAL SOCIETY OFFICERS AND DELEGATES

As soon as new officers and delegates are elected their names should be sent to this office at once. This is particularly important at the present time when information comes to this office which must be relayed to county officers immediately. Will all secretaries of county societies please take note and send these names in as soon as the election has taken place.

MEN IN SERVICE

At a recent meeting of the Council a decision was reached to remit all dues of members in good standing upon their entrance into service in the armed forces. During his term of service such a physician will be carried as a regular member of the State Association. In view of this any physician who is called into service should make sure that his dues are paid to date. This will obviate any misunderstanding or hard feelings in the future. This action was made retroactive and will take care of those members now in the service who were members of the Association before they were called.

INFORMATION

Please feel free to call upon the secretary for any information which he might have and which you desire.

JULIAN P. PRICE

Florence, S. C.

THE JOURNAL

OF THE

South Carolina Medical Association

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THOUGHTS FOR 1942

"All the darkness in the world cannot put out the light of the smallest candle."

All the greed and hate in the world cannot put out the devotion to service of the lowliest physician.

THE MEDICAL COLLEGE

This issue of the Journal is dedicated to the Medical College of the State of South Carolina.

The great majority of physicians in this state are graduates of this Medical School and those who are alumni of other institutions but who are now living in South Carolina have come to feel that they too are alumni by adoption if not by birth.

It is doubtful whether any institution exists in the state which has rendered more service to the man in the street, the woman in the home, and the baby in the crib, than has the Medical College. Her sons and daughters have gone forth to the remotest part of every county as well as to the larger communities and have there carried on the great traditions of the medical profession.

The Medical College has done much but there is more to be done in the days and years which lie ahead. At no time has the challenge for service been greater than it is now and if the Medical College is to reach that goal toward which it attains it can only be done through the cooperative endeavors of her natural sons and daughters, her adopted children and her friends.

A CALL TO THE MEDICAL PROFESSION

(Editorial, *Jour. Am. Med. Assoc.* Dec. 27, 1941.)

The nation is at war. The Congress has passed an amendment to the Selective Service Act which will call for registration of every man up to the age of 65 and which will place all men under 45 years of age subject to service at the order of the Selective Service boards.

The Procurement and Assignment Service for Physicians, Dentists and Veterinarians was established by order of the President on October 30. Thus the medical profession itself aids in determining proper distribution of the medical profession in supplying the needs of the armed forces and maintaining medical service to civilian communities, public health agencies, industrial plants and other important needs.

At a meeting of the Procurement and Assignment Service held in Chicago at the headquarters of the American Medical Association of December 18, jointly with the Committees on Medical Preparedness of the American Medical Association, the American Dental Association and the American Veterinary Medical Association, plans were drawn for making immediately available to the United States Army and Navy Medical Corps the names of physicians who wish to be enrolled promptly in the service of the government in this emergency.

On the opposite page is published a blank by which every physician may at once place his name with the Procurement and Assignment Service as one who is ready to serve the nation as the need arises. If you wish to make yourself available for classification, fill ou this blank and send it at once to Dr. Sam F. Seeley, Executive Director of the Procurement and Assignment Service. When these blanks are received, they will be classified and checked with the information available in the national roster of physicians at the headquarters of the American Medical Association.

For two thousand and nine counties in the

United States, lists have been prepared indicating physicians who are engaged in necessary civilian projects, public health services or educational activities from which they cannot be spared. Shortly the rest of the counties will have such lists available.

In each of the corps areas covering the United States a committee is being established, including representatives of medical, hospital, educational, dental, and veterinary activities. In the individual states, committees of medical, dental and veterinarian professions are being established through which the corps area committees will exercise their functions. In each county also local committees will provide accurate information regarding the status of each member of the profession concerned.

The raising of the Selective Service age from 28 to 45 will place a great number of additional physicians in the category of those on whom the nation may call as their services are needed. Estimates indicate that some sixty thousand physicians thus become available for service and that forty-two thousand dentists under the age of 45 also become subject to call. By enrolling with the Procurement and Assignment Service immediately, utilizing the blank on the opposite page, all physicians, but particularly those under 45 years of age, insure to every extent possible assignment to the type of service for which they are best fitted. They avoid thus also the possibility of unclassified service with the United States Army during the period that may be necessary following selection by the Selective Service before the commission can be secured. A physician called by the Selective Service who has not enrolled or who is not on a reserve list obviously serves without a commission during the time that necessarily elapses before a commission is secured. In future issues of THE JOURNAL announcements will be made regularly of the numbers of those who enroll and of the extent to which the immediate needs of the Army, Navy and other government agencies are being supplied.

ENROLMENT FORM FOR PROCUREMENT AND
ASSIGNMENT SERVICE FOR PHYSICIANS

Dr. Sam F. Seeley, Executive Officer
Procurement and Assignment Service
New Social Security Building
4th and C Street S. W.
Washington, D. C.

Dear Doctor Seeley:

Please enroll my name as a physician ready to give service in the Army or Navy of the United States when needed in the current emergency. I will apply to the Corps Area commander in my area when notified by your office of the desirability of such application.

Signed _____

1. Give your name in full, including your full middle name:
2. The date of your birth:
3. The place of your birth:
4. Are you married or single?
5. Have you any children? If so, how many?
6. Do you believe yourself to be physically fit and able to meet the physical standards for the Army and Navy Medical Corps?
7. Have you filled out previously the questionnaire sent to all physicians by the American Medical Association?
8. When and where were you graduated in medicine?
9. In what state are you licensed to practice?
10. Do you now hold any position which might be considered essential to the maintenance of the civilian medical needs of your community? If so, state these appointments:
11. Have you previously applied for entry into the Army or Navy Medical Service? If so, state when, where and with what result (if rejected, state why).

Date _____

Signature _____

Address _____



SOCIETY REPORTS

The annual meeting of the Medical Society of South Carolina was interrupted by the practice blackout in Charleston, December 16th. However, the shaded windows of the banquet hall, the candles, and the convivial spirits made the occasion a most enjoyable one.

At the December meeting of the Greenville County Medical Society, in addition to the election of officers, the Society took action regarding legislation for the inspection of milk and meat sold throughout the county and a recommendation was made to the County Delegation to provide for laws governing this.

The Christmas meeting of the Spartanburg County Medical Society was a gala affair. Following the election of officers the members with their wives and guests from Camp Croft enjoyed a banquet and a dance. There were 120 present.

The semi-annual meeting of the First District Medical Association was held at Walterboro, November 27th. Four papers were presented as follows: **The Physician and Medical Defense** by Dr. J. P. Price, **Differential Diagnosis and Treatment of Arthritis** by Dr. John Boone, **Radiation Therapy of Hemangiomas** by Dr. R. B. Taft, **Surgical Sense and Sensibility** by Dr. LeGrand Guerry.

At the November meeting of the Marlboro County Medical Society officers were elected for the coming year and plans were made for the traditional annual New Year's meeting scheduled for January 7, 1942.

At the December meeting of the Florence County Medical Society the program was devoted to a general discussion of the medical phase of Civilian Defense. In addition to the members of the Society the Chairman of Civilian Defense for Florence and Dillon Counties and the County Medical Directors

for Dillon and Horry Counties took part in the Discussion.

NEWLY ELECTED OFFICERS

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Dr. W. A. Hart, Treasurer

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Dr. Karl Able, Leesville, Vice President

Dr. J. H. Mathias, Lexington, Secretary-Treasurer

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Dr. T. H. Smith, Bennettsville, Secretary-Treasurer

Florence County Medical Society

Dr. John T. Howell, Florence, President

Dr. W. H. Poston, Pamplico, Vice President

Dr. Henry Herbert, Florence, Secretary-Treasurer

(Continued on page 25)

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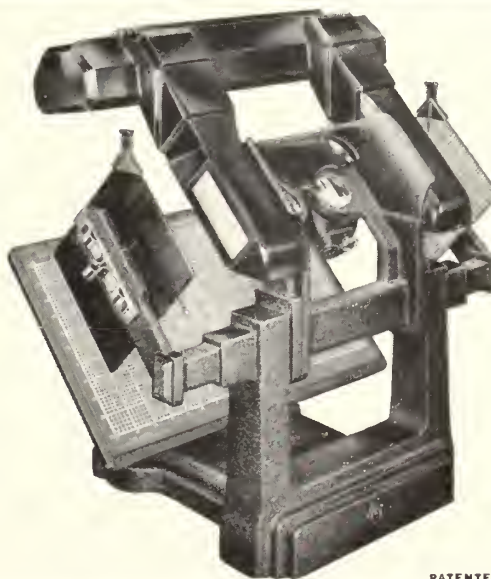
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PRACTITIONER'S PAGE

This page is devoted to the everyday problems of the physician in practice. Members of the Association are urged to suggest subjects for articles which they desire discussed. Members are also urged to submit questions. Each question will be referred to some physician who is qualified to make answer, and if the question involves a subject of general interest, the answer will be printed.

VITAMIN C

Roe E. Remington, Ph.D., D.Sc.

Professor of Nutrition

Medical College of the State of South Carolina

The scurvy-preventive vitamin has been variously called hexuronic acid, cevitamic acid, and ascorbic acid. The name cevitamic has now been abandoned by the American Medical Association in favor of ascorbic, the name given this substance by Dr. C. G. King when he first established its chemical composition.

Chemically vitamin C is a rather unstable substance, being readily oxidized by reagents or by the oxygen of the air. This very instability introduces an element of uncertainty when we attempt to use the values for content of ascorbic acid in foods which are given in books. The several days required for a shipment of lettuce to reach New York from Florida may show a marked decrease in ascorbic acid value. Cooking vegetables for an hour may cause losses as high as 50 per cent, or still greater if soda is added. This cooking loss is partly due to leaching into the cooking liquor, since vitamin C is a very soluble substance.

The best food sources are juices of citrus fruits and tomatoes (either fresh or canned, except that canned tomato juice may be inferior to canned tomatoes because in the methods of extraction of the juice before canning, air may be beaten into it), and the young tender leaves and shoots of green plants, eaten raw. A 3 1-2 ounce glass of orange or grapefruit juice will furnish about 2-3 of the daily requirement of an adult, or the entire needs of a pre-school child.

The physiological role of ascorbic acid is in the formation of the cement substance which holds the cells of the tissues together. The symptomatology of scurvy is well known, but there are degrees of vitamin C deficiency less severe than scurvy, which result in impaired vigor, fleeting muscular pains simulating rheu-

matism, and increased susceptibility to infections. Its relation to dental caries is not fully proved, but there is a definite relationship to the soundness of the teeth and gums. The following have been listed by Sherman (1940) as resulting from shortage of vitamin C. (1) Hemorrhages which may occur anywhere in the body. (2) Profound changes in the structure of the teeth and gums. (3) Changes in the growing ends of the bone with beading and other deformities which formerly were mistaken for rickets. (4) Falling apart of bones due to loss of supporting cartilage. (5) Enlargement of the heart and damage to the heart muscle. (6) Degeneration of muscle fibers generally, causing extreme weakness and even death. (7) Anemia due to destruction of blood-forming cells in the bone marrow and loss of blood by hemorrhage. (8) Loss of calcium through degeneration of the bone matrix, the bones sometimes becoming so soft that they break spontaneously. (9) Degeneration of the sex organs. Experiments with guinea pigs have shown that vitamin C increases resistance to diphtheria toxin, even though the level of vitamin intake was not low enough to produce any signs of scurvy.

The normal ascorbic acid content of blood is about 1 milligram per 100 cubic centimeters, and this value can fall to one-fourth or even lower before symptoms of scurvy appear. To maintain this value requires a continuous intake, since there is continuous urinary loss. The standard daily allowance recommended by the Committee on Nutrition of the National Research Council ranges from 30 milligrams for an infant to 75 milligrams for an adult man, 100 for a pregnant, and 150 for a nursing mother. Cow's milk has been found to contain 15 to 30 milligrams per quart, averaging about 20. Copper catalyzes destruction by oxidation, hence use of copper or brass utensils in pasteurizing plants lowers the vitamin value of the milk. Human milk has been reported as

containing from 10 to 100 milligrams per quart, undoubtedly correlated with the dietary supply. Hence even nursing infants require fruit juices or other source to insure a safe supply.

Of the clinical tests that have been published for the detection of vitamin C deficiency, the capillary fragility test is widely used in Sweden. A single test as to the amount of ascorbic acid in blood or urine is not considered as of significant value, reflecting possibly both the dietary intake for the preceding 24 hours and the individual vitamin metabolism of the patient. Since in a state of deficiency blood and tissues take up a greater percentage of an injected or

ingested dose, the determination of the percentage of a test dose excreted in a given time (6 hours), or the fasting blood level after four hours, gives valuable information as to the state of ascorbic acid nutrition. Another very simple test that has been proposed consists in the subcutaneous injection of a known quantity of a dye, and observing the time required for its decolorization by the reducing substances of the tissues. Under the conditions laid down, a decolorization time of ten minutes or less is normal, 13 minutes or more indicating deficiency.

AROUND THE STATE

Effort will be made to secure and publish news concerning the activities of individual physicians, and of the various medical societies of the state. Members of the Association, and especially secretaries of county societies, are urged to send in news items to the Editor.

DEATHS

Dr. William Samuel Moore died at his home at Heath Springs December 2nd.

Born at Franklin, N. C., in 1859, the son of a Presbyterian minister, he attended Davidson College and was a graduate of the College of Physicians and Surgeons at New York. He practiced medicine with marked success at Heath Springs from 1898 until a few years ago, when he was forced to retire by failing health.

Doctor Moore was unusually public spirited and gave much of his time and means to whatever he judged good for his community, especially his church, public schools and the improvement of public roads.

He is survived by his widow, the former Miss Emma McIlwaine of Lancaster County, and two daughters, Miss Mary Moore and Miss Albertine Moore.

News has been received of the death of Dr. James Malvern Halsey of Charleston.

NEWLY ELECTED OFFICERS

(Continued from page 16)

Laurens County

Dr. M. B. Nickles, Laurens, President

Dr. H. M. Rutledge, Laurens, Vice President

Dr. J. L. Fennel, Waterloo, Secretary-Treasurer

Chester County

Dr. J. B. Floyd, Great Falls, President

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Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

Case of Dr. L. A. Wilson

ABSTRACT NO. 450

Student F. M. Burdette, Jr. (presenting):

Present Illness: 40 year old negress admitted on 10-22-41 in about the eighth month of pregnancy. During the previous month she had noted considerable edema of the lower extremities and some slight edema of the hands and face. In the course of the last two weeks she had been troubled with a severe and almost constant headache and slight blurring of vision. Had gained considerable weight during this pregnancy, the exact amount of which she did not know. She had not been seen in Obstetrical Clinic.

This was her 12th pregnancy: 6 children living, 4 died in infancy, one miscarriage at 4 mos. cause unknown.

Past History: Following birth of full term child, 1-15-40, she was seized with chills, fever, pain in right side and vomiting after her discharge from the hospital and she was readmitted on 2-3-40. Urinalysis then showed 2 to 4 plus albumin, 20-30 pus cells (catherized), and 30-40 RBC, 2 plus casts. She was given sulfaphyridine and was discharged improved. Kolmer and Kline positive, BP 106/70. At the time of the birth of the child in January, she was told she had "high blood pressure and bad blood" and if she had any more children she would die.

Laboratory:

Urinalysis, 10-22-40.

Cath.

Sp. Gr. 1.008

Reaction Acid

Albumin 4 plus

Sugar 0

Acetone 0

Epith. 0

Pus 0

RBC 0

Casts 1 plus Hyaline

1 plus FG.

WBC 8600

Hb. 9.5 gms.

Polys 71%

Urea N. 15 mg.

Course: Labor induced. Membranes ruptured at 2 P. M., 10-23-40. Delivered spontaneously at 6 P. M. Lost about 1000 cc. of blood and went into shock. Bleeding stopped. Given fluids and improved somewhat, then began bleeding again and lost 500 cc. of blood. Blood pressure unobtainable. Given

transfusion and fluid. BP 70/30?; very restless. Gradually grew worse; highest BP recorded after 8 P. M. was 52/40. Expired at 11:28 P. M. on 10-23-40.

Dr. L. A. Wilson, (Conducting): Mr. Allison, what pathology do you think was found in this patient and what sequence of events led to such a state of affairs? In other words, what is your diagnosis?

Student Allison: I think the diagnosis is pre-eclampsia?

Dr. Wilson: How do you explain all the symptoms on this diagnosis and what was the cause of her death?

Student Allison: The hypertension, albuminuria, gain in weight, headache, blurred vision, and edema occurring in the last trimester of pregnancy are all indicative of a pre-eclamptic state. The cause of death was probably post-partum hemorrhage, the exact mechanism of which is uncertain. I do not believe that the hemorrhage would have proven fatal if she had not had the toxemia.

As to the cause of her toxemia, I think that one should attempt to rule out some form of nephritis, or hypertensive cardiovascular disease and I believe that a phenolsulfonphthalein test would have been of aid. I also believe that she had a pyelonephritis during her last pregnancy and that this may have progressed and be the cause of her trouble at present.

Dr. Wilson: What type of toxemia do you think she had?

Student Allison: I think she had that form of pre-eclamptic toxemia where the damage is chiefly in the liver.

Dr. Wilson: Will you hazard a few suggestions as to what was the cause of her hemorrhage?

Student Allison: Atony of the uterus, retained placental tissue, or some form of laceration are the most common causes of post-partum hemorrhage, but we have no clue here as to the exact cause of the bleeding in this case.

Dr. Wilson: Mr. Stokes, do you agree with what has been said?

Student Stokes: Yes, I believe she was suffering from pre-eclamptic toxemia. I think the kidney findings in the last pregnancy are suggestive of pre-eclamptic toxemia also, so she may have had this disease at that time.

Dr. Wilson: Will you classify the various forms of toxemia for us?

Student Stokes: Well, first we have pernicious vomiting of pregnancy which occurs during the

first months. Pylonephritis is also sometimes included, but should not be classed as toxemia. There is then pre-eclampsia and eclampsia occurring in the latter months of pregnancy. In this case I think we have differentiated from acute glomerulonephritis, also—but there was no retention of Urea Nitrogen which is certainly against it.

Dr. Wilson: Mr. Wright, do you have anything to add?

Student Wright: I agree with what has been said, but will have to admit that I cannot differentiate between chronic glomerulonephritis and a pre-eclamptic toxemia. I think one has to have kidney function tests and an examination of the eye grounds.

Student Burdette: The eye-grounds are recorded as normal.

Dr. Wilson: Mr. Allison, do you consider 1500 cc. an abnormal loss of blood?

Student Allison: Yes, I do. I believe that 500-600 cc. of blood loss is considered the upper limit of normal. I really do believe, however, that she should have lost more blood if we are going to hold the hemorrhage alone responsible for her death. Some laceration of the birth canal or tear of a varicosity may have been the source.

Dr. Wilson: Mr. Stokes, what do you think about inversion or rupture of the uterus as a cause of the shock?

Student Stokes: As regards the former, I think it is a possibility, but would like to have some information as to the height of the fundus. The latter, I think is a very good possibility, particularly of the lower uterine segment. If she had a ruptured uterus, however, I believe it unlikely that she would have gone ahead and delivered as she did.

Dr. Wilson: Yes, that is true. We also have to bear in mind the possibility of rupture into the abdominal cavity. I have found that one of the signs of a ruptured uterus that is most often overlooked is a cessation of uterine contractions and labor pains. What about an air-embolism, Mr. Stokes?

Student Stokes: I'm afraid I don't know.

Dr. Wilson: Air-embolism is one of those diagnoses you make when an autopsy is not performed to ascertain the true cause of death. (Laughter).

Student Stokes: In discussing the hemorrhage, one has to remember that she had only 9.5 gm. of hemoglobin to begin with and this definitely has to be considered in evaluating the effect of the blood loss.

Dr. Wilson: Along this line, I would like to ask Dr. Kredel whether he believes that a greater number of hemoglobin determinations would have helped in a better understanding of this case?

Dr. Kredel: That depends a great deal on how the patient was treated. If you combat the hemorrhage by giving a lot of saline and fluids, naturally the hemoglobin will fall, but if you don't, it may take 24 hours for the blood loss to become apparent in the hemoglobin values.

Dr. Arthur Rivers: I did not hear the entire discussion, but I am under the impression that the statement was made that this woman could not have delivered if she had a ruptured uterus. I just wanted to say that it is possible for a ruptured uterus to ahead and deliver from below.

Dr. Lynch (Demonstrating uterus): This woman had a rupture of the uterus. There was no free blood in the peritoneal cavity. Here in the left broad ligament you see a collection of blood beneath the serous coverings. Internal to this within the wall of the uterus there is a considerable longitudinal rupture which goes through the side of the cervix into the upper uterine segment and measures about 3 inches in length.

In addition there is considerable old scarring of the myocardium, uncovering the origin of which I am not altogether sure. It might be the relic of an old attack of rheumatism. The liver and kidneys did not definitely show any degenerative changes such as we commonly see in these organs in the eclampsia. However, the necropsy was performed two days postmortem; even so one would expect to see more damage. She did have the relic of an old pyelonephritis, which was not marked. What she had for which labor was induced is not apparent from an anatomical standpoint. We can't tell what the condition was that made her sick. Neither do we know why the uterus ruptured; there is no change present that would account for it. We merely chose to present the anatomical findings as they existed for discussion.

Dr. Wilson: The causes of rupture of the uterus are usually divided into two classes, traumatic and spontaneous. A precipitate labor, such as this might cause extension of a tear up an old laceration into the uterus. Most ruptures are due to putting on forceps, dragging a breech through, or by manual dilatation of the cervix. We also see it in the scar of an old caesarean section and in cases in which pitting is given to hasten labor. This tear resembles one that is caused by pituitrin, but no such drug was used.

Spontaneous rupture of the uterus is interesting. We had a case recently which ruptured and patient died before anything could be done. Some type of fatty and hyaline change is believed to account for it by some. I wonder if toxemia of pregnancy could not account for such uterine muscle degeneration.

WOMAN'S AUXILIARY SOUTH CAROLINA MEDICAL ASSOCIATION

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Mrs. Richard M. Pollitzer
Greenville, S. C.

Publicity Secretary
Mrs. W. H. Lyday
Greenville, S. C.

MESSAGE FROM PUBLICITY CHAIRMAN

As State Publicity Chairman of the Woman's Auxiliary to the S. C. Medical Association I am making an appeal to each auxiliary president to inform her publicity secretary to please mail all reports, publicity and activities of each auxiliary to your State Publicity Chairman before the eighteenth of the month previous to one of publication.

With an earnest desire to serve in this capacity to the best of my ability, may I urge you to please be prompt.

Thanks.

Mrs. W. H. Lyday,
Publicity Secretary S. C. Medical
Auxiliary.

The December meeting of the Greenville County Woman's Auxiliary was held at the home of Mrs. B. C. Bishop. The main address of the occasion was delivered by Dr. Gerta Schwartz who spoke on "The Life of a Doctor in Hungary."

The Auxiliary went on record as endorsing the movement in Greenville County to secure a milk and meat inspection law. It was also decided to buy a Health Bond and to launch a "Better Nutrition" campaign. It was reported that the recent Cancer Control Campaign had contacted at least 2,500 persons.

Mrs. R. M. Pollitzer of Greenville, State President, was the guest speaker at the December meeting of the Spartanburg County Auxiliary which was held at the home of Mrs. William H. Folk. Mrs. Pollitzer discussed "The Importance of Doctors Wives in National Defense."

Mrs. M. A. Phifer, President, also spoke and gave a sketch of Jane Todd Crawford, the

first woman to undergo an ovariectomy, which was performed by Dr. Ephraim McDowell in Kentucky in 1809.

Present at the meeting were guests from Greenville and the wives of Army physicians at Camp Croft.

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THE JOURNAL

of the

South Carolina Medical Association

VOLUME XXXVIII

February, 1942

NUMBER 2

Cystinuria--Cystin Calculi

JAMES J. RAVENEL, M.D., F.A.C.S.

and

J. C. AULL, M.S.

CHARLESTON, S. C.

Case Reports

JAMES J. RAVENEL

No. 1—Miss L. E. G., age sixteen, admitted to Roper Hospital August 23rd, 1940. Family history was negative. She had had tonsillitis and an abscessed tooth was removed a month before.

Present illness: Began in April, 1939 when the patient was constipated for a week. At this time she also passed very little urine and became generally swollen. She was admitted to another hospital for a week and in bed at home for two more weeks. After this she felt fairly well. One month ago she began having pain in her left side which did not radiate. The pain was constant and moderately severe for a week. The pain then shifted to the right side and was continuous for two weeks. During the second week she passed only a few drops of urine. Gradually the flow of urine returned to normal. One week ago her urine again decreased to only a few drops and for the past two days has passed practically no urine at all. A generalized edema began about a week ago and continued to time of admission. There have been frequent attacks of nausea and vomiting during the anuric periods.

Physical examination: A rather small sallow but well nourished girl of sixteen years. She is generally edematous, particularly the face, and seems quite sluggish mentally and physical-

ly. Tonsils are moderately enlarged; pharynx not congested. Heart and lungs are normal. There is a large tense tender mass filling the upper right abdomen and which moves with respiration. There is a similar mass on the left side but not quite as large. Because of the history of anuria for nearly two days, a catheter was passed and about one dram of urine obtained. The patient has never menstruated. She has practically no hair under the arms or pubic region. External genitalia not completely developed but breasts are.

Urological Study: Bladder and ureteral meati normal in color. The right ureter obstructs everything 19 centimeters up. The left ureter obstructs everything 5 centimeters up. Nothing could be passed up either ureter. The small amount of urine obtained showed numerous pus cells but nothing else.

X-ray: X-ray showed the right kidney poorly outlined. The left kidney was well outlined and apparently quite large. In the region of the right kidney was seen numerous round and oval shadows of varying sizes and one shadow at the level of the 4th lumbar vertebra on the right. Areas of increased density were also found along the course of the lower portion of the left ureter.

The blood chemistry proved interesting. Within twelve hours after admission the blood

urea nitrogen was 81 milligrams per cent and the creatinin 7.6 milligrams per cent. Twenty-four hours later and after an emergency bilateral nephrostomy, the blood urea nitrogen dropped to 15 milligrams per cent. Unfortunately the laboratory did not run the creatinin at this time. Later the blood calcium and phosphorus were reported to be 11.5 and 5.17 milligrams per cent respectively.

Following the emergency bilateral nephrostomy, two other operations were performed to remove the stones from the right ureter, right kidney and left ureter. She passed several smaller stones spontaneously. The chemical laboratory reported these stones to be pure cystine.

The patient has been kept on an alkaline ash diet and regulated alkaline therapy. While it is too early to predict what the future holds for her, we have reasons thus far to hope for at least a control or prevention of stone formation. It appears to be impossible to prevent the cystinuria but fortunately many cystinurics do not form stones.

No. 2—J. K. P., white, male, age fifteen at time of first attack in 1933. The pain was very severe in right lumbar area. On the day following onset a large amount of bloody urine was voided. The following week the patient suffered another severe attack necessitating morphine. A third attack within four days resulted in an examination by an urologist. X-ray showed no suspicious shadows but a tentative diagnosis of "kidney stones" was made. No treatment was advocated.

Self treatment by the patient with a drug manufactured in South Carolina resulted in some measure of relief. Within a period of three to seven days following each attack, he passed from one to five stones. Blood was passed only after the first stone.

In 1934 he came under the care of another urologist who examined him very carefully and a chemical examination of the stones he had passed was made and reported as "cystin stones." The patient was put on a diet. Analysis of the preparation which he had been taking revealed that the main ingredient was sodium bicarbonate, flavored with mint. He was ad-

vised to take one teaspoonful of sodium bicarbonate daily as an alkalinizer. This treatment resulted in fewer attacks but the amount of stones passed remained the same. Subsequent investigation revealed that he was suffering from cystinuria, which gave rise to aggregations of the cystine crystals into cystine stones.

In the early part of 1935 he suffered an attack so severe that he was cystoscoped and a large catheter left in place for 36 hours. The patient passed several stones from the left kidney following this treatment.

During 1936 and part of 1937 he had no severe attacks but continued to pass four to five stones a week with some attendant pain. Blood appeared whenever he voided after violent exercise. He adhered closely to his diet during this entire period.

July 1st, 1937 he suffered severe pain in the right kidney area. X-ray and cystoscopy revealed a large stone in the right kidney pelvis. He was not informed of the findings but his family was told and advised as to precautions to take. Within three days he was unable to retain food or liquids. This time the right ureter was completely obstructed. A catheter was finally passed up the right ureter and a large amount of urine was evacuated. Operation was done August 15th, 1937, removing a stone about the size of a large pecan and which was composed partly of cystine. The patient made a good recovery and returned to college on October 5th, 1937. However, on September 15th, he had passed six stones.

Since September 15th, 1937 no more stones have been passed. He has been X-rayed at intervals of about six months. During the summer of 1938 he was seen by two urologists who found him in excellent condition but recommended changes in diet. A special low protein diet of 50 grams of protein, 135 grams of fat, and 270 grams of carbohydrate daily was prescribed. On the new diet he was not required to take any sort of alkali and now has no feeling of sluggishness and has felt normal for the first time since 1933 when the attacks began. From onset to September, 1937 he had passed approximately five hundred stones.

SUMMARY

1. Two cases of the rather rare cystinuria and cystin calculi are reported.
2. The rapid recovery of an anuric patient with creatinin of 7.5 milligrams per cent is recorded.
3. The fact is demonstrated that cystin calculi do cast shadows by X-ray.

BIOCHEMICAL DISCUSSION

(J. C. Aull)

The cystinuric individual is probably of much more interest to the biochemist than he is to the physician; because while there is a tendency toward formation of calculi (as Dr. Ravenel has pointed out), there are very rarely any other symptoms, and it is quite probable that many a cystinuric individual has lived to a ripe old age without himself, his doctor, or anyone else ever realizing that he was afflicted with what Garrod¹ has called "an inborn error of metabolism." To the biochemist, however, the cystinuric individual has been quite useful as a type of experimental animal. For a long time biochemists interested in the study of carbohydrate metabolism have made use of depancreatized or phloridzinized animals in order to determine the effect of various constituents of the diet on sugar formation in the animal body. Cystinuric individuals have been used in somewhat the same way for certain types of studies on sulfur metabolism. About five years ago Brand² and his co-workers reported a case of cystinuria in a male Irish Terrier. Realizing the value of these animals in experimental work, and realizing also that this condition, in man at least, was known to have a strong familial tendency, these investigators have kept track of the progeny of this cystinuric animal and recently announced³ that by a process of close inbreeding they had practically succeeded in developing a cystinuric strain of Irish Terriers. They hope within a few years to have these animals available for workers in other laboratories.

Since cystinuria is specifically an "error" of sulfur metabolism, and since the most important sulfur compounds of biological importance are the proteins, let us consider the

sulfur containing amino acids known to be present in the protein molecule (see table I). The first of these (not necessarily in importance, but in point of time) is cystine, the amino acid excreted in such abnormally large amounts by the cystinuric individual. As a matter of fact, cystine was discovered in 1810 as a constituent of a urinary calculus, although not shown to be present in proteins until 1899. Then from 1900 to 1925 or 1930 practically all interest in sulfur was focused on this amino acid—cystine. Growth experiments in which low protein diets were supplemented by cystine led to the belief that cystine was an essential amino acid, and this belief was quite generally accepted for a good many years even after the discovery of the second sulfur containing amino acid, methionine, in 1923. It was not until 1937 that Rose⁴ was able to show that methionine is the essential sulfur containing amino acid in the protein molecule and that it can completely replace cystine in the diet (at least as far as growth is concerned). Cystine will stimulate growth only when there is a suboptimal amount of methionine present. However, since animals continue to grow on a diet containing methionine but no cystine—and particularly since they continue to grow hair which contains relatively large amounts of cystine—it would seem that the animal is able to convert methionine to cystine. Experiments with cystinurics—as well as many other lines of evidence—support this view.

When protein, with sulfur containing amino acids, is ingested, its sulfur is eliminated by the kidney in two principal forms: either it is oxidized and eliminated as sulfate, or it is eliminated in a so-called neutral or unoxidized form. For the normal individual probably about 90% of the total sulfur will be in the oxidized form—that is, either as inorganic sulfates or detoxication products such as indican and other ethereal sulfates—while about 10% will be as neutral sulfur. This neutral sulfur fraction in the normal individual consists of a small amount of cystine, some mercaptans, thiocyanates, etc. Most of these substances are apparently of endogenous origin since the amount of neutral sulfur is not appreciably affected by diet. On a low protein diet there-

fore this fraction may rise as high as 25% of the total sulfur. In Table 1 is shown the sulfur partition of one of the cystinuric individuals studied in comparison with that of a normal individual. The principal difference between the two lies in the fact that there is a marked increase in the neutral sulfur fraction—both relatively and absolutely—and this increase is of course due to the large content of cystine.

What is the source of this cystine? It varies with the protein content of the diet, so what could be more natural than to assume that the cystine in the protein molecule was responsible? It soon became apparent however that this was not the case^{5, 6}. When cystine is fed to a cystinuric individual the extra sulfur is found in the sulfate fraction of the urine and there is no increase in the cystine content. Methionine, however, when added to the diet of the cystinuric does increase the cystine excretion. This fact would not be so surprising were it not for the fact that the cystinuric can completely oxidize cystine itself. As previously pointed out, a number of facts indicate that methionine can be converted to cystine in the animal body—but why does the cystinuric individual excrete the cystine which he makes from methionine and at the same time completely oxidize the cystine of the diet, whether administered as such or as a constituent of the protein molecule^{7, 8}? It would seem that there might be some difference between the two "cystines," but if so it is not detectable by any known physical or chemical means. Not only is it impossible to distinguish between the two, but cystine has been isolated from the urine of a

cystinuric, purified, fed back to the same individual, and found to be completely oxidized⁶.

No satisfactory explanations of the above mentioned facts are to be found in the literature. Some interesting results have been reported in studies involving some of the probable intermediary compounds in the conversion of methionine to cystine, and their effect on cystine excretion by the cystinuric. But as far as this "inborn error of metabolism" is concerned, we apparently still don't know just what the error is or just where it lies.

Table 1

$\begin{array}{c} \text{S} \text{---} \text{---} \text{S} \\ \qquad \quad \\ \text{CH}_2 \qquad \quad \text{CH}_2 \\ \qquad \quad \\ \text{CH} \qquad \quad \text{CH} \\ \qquad \quad \\ \text{=HN COOH} \quad \text{=HN COOH} \\ \text{(cystine)} \end{array}$	$\begin{array}{c} \text{CH}_2 \text{ S. CH}_2 \\ \\ \text{CH}_2 \\ \\ \text{CH} \\ \\ \text{=HN COOH} \\ \text{(methionine)} \end{array}$		
Sulfur Partition			
	total	sulfate	neutral
Normal	100%	90%	10%
Cystinuric	100%	49%	51%

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(What physician is there who is not exasperated with a request for an itemized statement for his professional services and who will not appreciate the following story printed in the Journal of Allergy.)

BARGAIN DAY IN THE NEXT WORLD

A few weeks ago an artist was employed to renovate and retouch some old paintings in an old church, and when he sent in his bill for \$26.87 he was told that an itemized bill was desired.

He accordingly submitted the following:

For renewing Heaven and adjusting the stars	\$ 7.12
For touching up Purgatory and restoring the lost souls	3.06
For brightening up the flames of Hell, putting a new tail on the Devil and doing odd jobs for the damned	7.17
For putting a new stone in David's sling and arranging Goliath's head	6.13
For mending shirt of Prodigal Son	3.39
	<hr/> \$26.87

Observations of Certain Plastic Surgical Procedures

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The purpose of this paper is to call attention to the standards of excellence which we should try to attain in restorative work. Gross defects such as complete harelip are so startlingly improved by even indifferent closure that we are apt to be content with results which fall far short of the possibilities of achievement. We must concede the fact that there are limitations beyond which we cannot go in removing the stigma of deformity. The confinements of our limitations will be discussed, pointing out along the way certain procedures which will help us to suffer the fewest limitations. For the purpose of this description, harelip, cleft palate, and burns have been chosen, and only certain more important features of these conditions will be discussed.

Only when we set high standards of excellence in restorative work does the task become difficult. Simple closure of a cleft lip is one of the easiest of surgical procedures if one does not work toward removal of all stigmata of the deformity. The chief stigmata are flat, wide nostril on the deformed side, and retracted, flat and short lip. All of these stigmata are likely to exist after an indifferent closure of a lip defect. Often the result observed after a careless repair is far short of the possibilities of accomplishment. Any operative technic which is to be accepted as suitable should restore the normal relationship of the alae, furnish enough tissue near the vermilion border to give the lip its normal protrusion at this point, and not interfere with the normal forward support of the premaxilla. The Mirault-Blair technic has been worked out in an effort to accomplish these purposes. It consists essentially of turning down a flap from the deformed side to be placed at the lower border of the lip to fill out its contour. The nostrils are brought into correct alignment by careful caliper measurements. A minimal amount of tissue is sacrificed during the process of denudation. The premaxilla is

not forcibly reduced by wiring but is made to come into position by pressure of the repaired lip over a period of months. It is best to make harelip repairs as soon after birth as feasible because the nasal bones and cartilages are more malleable, and there will be more spontaneous readjustment of them. It is unnecessary to state that heavy suture material should not be used because it will lead to hideous scarring which is almost impossible to remove subsequently.

Standards of excellence should be equally high in the repair of cleft palates. The major or primary aim of this operation should be the correction of the defect of speech. Any procedure should have as its ultimate aim the accomplishment of this purpose rather than the anatomical closure of the defect in the palate. It would appear on the surface that anatomical closure would accomplish physiologic perfection, but this is not necessarily so. The fact that the soft palate must close the nasopharynx in an ideal correction is often lost sight of. Unless this closure is made satisfactorily the speech is likely to remain faulty, and food may regurgitate into the nose. So we see that cleft palate repair should be judged from a physiologic rather than an anatomical viewpoint. The operation should accomplish setback of the palate where necessary, and preserve the muscular and constrictor action of the soft palate. Every effort should be directed toward this result with the original operation, but it is sometimes necessary to restore to the "setback" procedures of Dorrance, Brown, and others. We should not rest until all efforts to accomplish perfect speech have been exhausted. The attack on cleft palate should be begun at the time that the child begins articulate speech, that is, at about eighteen months. Corrections made after this time require a great deal of subsequent speech training, for the child who has learned to talk without a palate must learn to use the tongue, and other accessories to voice, all over again against

an intact palate. The Brophy and other procedures which employ forcible wiring for the accomplishment of closure should be discarded except in very rare instances because of the damage they do to tooth buds and because they narrow the maxillae to the point of causing marked cosmetic deformity.

In a consideration of the treatment of burns the one of many important factors which impresses us as being most important is the early preparation for and performance of grafting. We would like to advocate and urge the use of hypertonic saline baths for this purpose. They should be instituted as soon as it is



1. Illustrates the so called Washington University operation for double harelip. The points marked by letters are approximated to each other. The premaxillary teat of skin is used but the red portion of it is sacrificed. The premaxillary bone is used for support. When it projects too far it may be reduced by removing a small wedge from or by incising the nasal septum.

2. These illustrations reveal the steps in the Mirault-Blair technique for repair for single harelip. Study of the diagrams shows (a) adjustment of the nostril (b) production of natural forward protrusion of lower portion of the lip.

3. This illustration shows the flat, retracted lip which may result from sacrifice of too much tissue of the lip before closure, or forcible and excessive reduction of the premaxilla or sacrifice of the premaxillary teat in double harelip. It is impossible to correct this deformity except by prosthesis.

4. This illustration shows a satisfactory closure of a double lip cleft. The forward protrusion of the lip is maintained because the premaxilla was preserved. It is never necessary to remove the premaxilla. (a) before and (b) after closure.

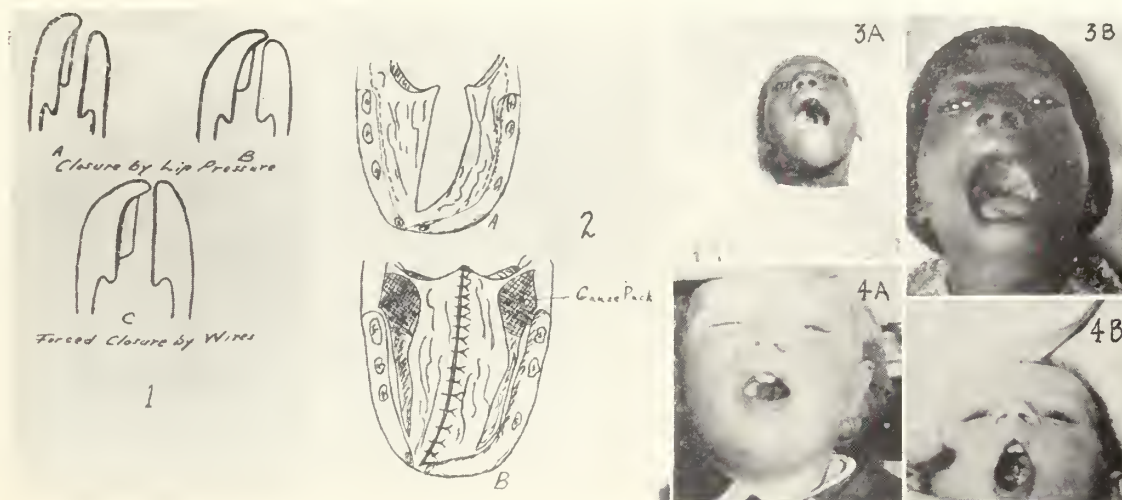
5. Illustrates what may be called a satisfactory closure of a single lip defect. The nostrils are equal. the lower border of the lip has normal protrusion and the scar is not apparent. This type of closure is the one for which we should strive. (a) before and (b) after closure.

6. This illustration shows especially well the value of subcuticular tension suture. Heavy cross scarring which is apparent is caused by heavy suture material. This scarring is difficult to remove. The large tab on the lip is unexplained. (a) before and (b) after secondary repair. Some of the cross scarring must remain.

7. This illustration shows the flat, wide nostril on the deformed side which results from failure to adjust the tip of the ala to the base of the columella. The lip margin is also irregular which makes for a poor cosmetic result.

determined that healing of the burned area will not be readily spontaneous. In infected burned areas they should be employed as a primary treatment of the infection and secondarily as an ideal preparation for early grafting. The type of graft to be employed should be considered seriously, and the Thiersh, full thickness, or pinch grafts applied where they are individually indicated. For instance, a pinch graft will yield a very poor cosmetic result on

the face or other exposed part, and a split or full thickness would serve much more admirably. Poor results are very likely to follow the injudicious selection of the various types of grafts. But aside from the type of graft selected, we always come back to the very essential fact that any type is more likely to terminate with a satisfactory result if the area is prepared for and grafted early.



1. These diagrams illustrate the closure of the premaxilla which will be accomplished by pressure of the intact repaired lip. Diagram (c) shows the relation of the premaxilla to the maxilla if forced wiring is restored to. In (b) the premaxilla is far enough forward to maintain the forward protrusion of the lip. In (c) the premaxilla is pushed back and the lip will be retracted. Figure (a) represents the original condition of the maxillary structure.

2. Illustrates the so called Dieffenbach-Warren technique for repair of cleft palate. It consists of the freeing and transposition toward the midline of the muco-periosteal and velar flaps. This accomplishes some "setback" of the palate and most frequently produces closure of the nasopharynx on phonation. Occasionally purposefully designed "setback" operations must be employed secondarily.

3. and 4. (a) before and (b) after closure. The pictures cannot illustrate the functional result but in each instance the nasopharynx is closed by the repaired velum. With a soft palate which closes the nasopharynx good speech is probable. Closure performed after two years of age must be followed by careful speech training.



1. Illustrates the prevention of contracture by early grafting. Burns of flexion surfaces should be subjected to grafting especially early. (a) before and (b) after.

2. Illustrates again the result of delay in grafting. Interference with the contour of the chin and lip has resulted from contracture of neck which had been present for 9 years. (a) is the original and (b) and (c) are the final results. The graft was placed low so that it could be covered with clothing.

3. Illustrates that the type of graft selected is important. Pinch grafts had been applied and contracture had occurred. The entire area was excised and filled with a full thickness graft carried on a pedicle with the result shown in (c) and (d). (a) is the original condition and (b) the formation of a pedicle to nourish the graft.

4. The case illustrated had been in this condition (a) for 18 years. The tendon of the biceps was contracted and had to be lengthened, and a very large amount of tissue had to be transferred to the flexion surface of his arm. Early grafting would have precluded the difficulty encountered.

WHAT EVERY WOMAN DOESN'T KNOW— HOW TO GIVE COD LIVER OIL.

What Every Woman Doesn't Know is that psychology is more important than flavoring in persuading children to take cod liver oil. Some mothers fail to realize, so great is their own distaste for cod liver oil, that most babies will not only take the oil if properly given, but will actually enjoy it. Proof of this is seen in orphanages and pediatric hospitals where cod liver oil is administered as a food in a matter of fact manner, with the result that refusals are rarely encountered.

The mother who wrinkles her nose and "makes a face" of disgust as she measures out cod liver oil is almost certain to set the pattern for similar behavior on the part of her baby.

Most babies can be taught to take the pure oil if, as Eliot points out, the mother looks on it with favor and no unpleasant associations are attached to it. If the mother herself takes some of the oil, the child is further encouraged.

The dose of cod liver oil may be followed by orange juice, but if administered at an early age, usually no vehicle is required. The oil should not be mixed with the milk or the cereal feeding unless allowance is made for the oil which clings to the bottle or the bowl.

On account of its higher potency in Vitamins A and D, Mead's Cod Liver Oil Fortified with Percomorph Liver Oil may be given in one-third the ordinary cod liver oil dosage, and is particularly desirable in cases of fat intolerance.

George Washington's Health Record*

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The following account concerns the record of George Washington's health, in particular his last illness, as it is this fatal affection which has caused a great deal of discussion among physicians and considerable indignation among the laity. Even at this late date the verdict regarding the propriety of the treatment which he received, is not unanimous, and it is quite conceivable that contradictory opinions may be defended with much justification.

He was born in 1732. An entry in his mother's bible concerning this event reads as follows: "George Washington Son to Augustine and Mary his wife was Born ye 11th day of February 1732 about 10 in the morning." At first glance there appears to be a discrepancy between the date contained in this entry and the one which his countrymen have been accustomed to celebrate for nearly a century and a half. The explanation lies in the fact that, in 1752 an English statute known as the Calendar Amendment Act or Lord Chesterfield's Act went into effect, substituting the Gregorian for the Julian calendar and advancing all dates eleven days.

Washington came of an old Norman family who had lived in England hundreds of years. The Rev. Lawrence Washington, a prominent clergyman of Essex, had two sons, John and Lawrence, who emigrated to the colony of Virginia in 1656 and settled in Westmoreland county. John's son, Lawrence was the father of Augustine, whose son George has been destined to immortalize the family name. Longevity was not one of the family traits on his father's side, as his great-grandfather died at 54, his grandfather at 37 and his father, rather suddenly, at 49 years of age, from an acute inflammation following a severe cold, after an exposure to inclement weather. His half brothers, Butler, Lawrence and Augustine died under 40. His half sister Jane died at 13. His oldest sister Betty lived to be 64, while

his brothers Samuel, John Augustine, and Charles died at the age of 47, 51 and 61 respectively. His sister Mildred died in infancy. His mother died in 1798 at the age of 82 years. Dr. W. B. Blanton, referring to Washington, in his book "Medicine in Virginia in the 18th Century" says: "He had a bad inheritance. His paternal fore-fathers were short-lived, and there was a marked tendency to pulmonary disease among his ancestors."

It has been generally known that Washington was endowed with great physical strength and an enormous amount of endurance. Although there is no direct evidence that he actually threw a stone across the Rapahannock at Fredericksburg, the story is significant in that it indicates his reputation for unusual strength. However, little mention has been made by his biographers of his numerous disabling and painful ailments, with the exception of his last illness.

His appearance was striking. He was 6 feet 3½ inches tall. His weight varied at different times of his life between 175 and 220 pounds. In his description of Washington in 1760 George Mercer says: "His frame is padded with well-developed muscles, indicating great strength. His bones and joints are large, as are his feet and hands. He is wide shouldered, but has not a deep or round chest; is neat waisted, but is broad across the hips, and has rather long legs and arms. His head is well shaped though not large. . . . A large and straight rather than prominent nose; blue-grey penetrating eyes, which are widely separated and over-hung by a heavy brow. His face is long rather than broad, with high round cheek bones, and terminates in a good firm chin. He has a clear though rather a colorless pale skin, which burns with the sun. Dark brown hair. His mouth is large and generally firmly closed, but which from time to time discloses some defective teeth. His features are regular and placid. His voice is agreeable rather than strong." Dr. James Thacher, writing 18 years later, says: "General Washington is now in the

*Read before the Spartanburg Medical Society October 27, 1941.

forty-seventh year of his age; he is a well-made man, rather large boned, and has tolerably genteel address; his features are manly and bold, his eyes of a bluish cast and very lively; his hair a deep brown, his face rather long and marked with the small-pox; his complexion sunburnt and without much color, and his countenance sensible, composed and thoughtful; there is a remarkable air of dignity about him, with a striking degree of gracefulness." Senator Maclay describes him in 1789 as being "in stature about six feet, with an unexceptionable make, but lax appearance. His frame would seem to want filling up. His motions rather slow than lively, though he showed no signs of having suffered by gout or rheumatism. His complexion pale, nay, almost cadaverous. His voice hollow and indistinct, owing, as I believe, to artificial teeth before his upper jaw, which occasions a flatness."

Washington was accustomed to vigorous outdoor exercise. As surveyor, explorer and Indian fighter he became used to hardships of exposure to the elements and rigors of campaign. While still in his teens he worked weeks at a time in unexplored hills and virgin forests, sleeping on cold, damp ground, without cover or shelter. He was known to be fond of outdoor games and is said to have excelled in some of these as well as in feats of strength. He rode on horseback about fifteen miles a day, and when fox-hunting, was in the saddle all day, three to five days a week. This continual exercise and training is believed to have developed his unusual power of resistance to infections which attacked him on numerous occasions. In addition to fox and bear hunting he liked duck shooting, fishing and horse racing. Between 1768 and 1774 he went fox hunting 155 times, attended races 61 times, theatre 37 times, went gunning 21 times, and attended 29 balls. He is said to have been an unusually proficient and graceful dancer. His habits were regular and methodical. . . He rose between 4:30 and 5:00 in the morning and retired at about 9 o'clock in the evening. His eating habits were very simple. He ate his breakfast at seven o'clock in the summer and at eight in the winter. It consisted of a few Indian meal cakes with honey and two or three small cups of tea. For supper he took

bread with tea or a glass of milk. His principal meal was the dinner, which was served at about 2 o'clock. The food was plain and wholesome, since Washington was not an epicure and was easily satisfied. He did not use tobacco, but liked to take two glasses of old Madeira with his dinner. When guests were present, it was the custom to drink a glass for each toast offered. At a state dinner once 31 toasts were drunk. General Putnam, who was one of the participants, had to be carried to his quarters, but Washington held his liquor well.

Concerning his childhood diseases little is known, but he is presumed to have had measles, as he did not contract the disease while taking care of his wife, who had an attack of this illness during the first year of their married life. When he was sixteen years old he was severely ill with "ague and fever." He suffered from sea sickness during his voyage to Barbadoes in 1751, where he accompanied his brother who is supposed to have had tuberculosis. There he contracted smallpox and was ill three weeks. After his return from Barbadoes he wrote as follows: "I was taken with a violent pleurisy, which . . . reduced me very low." During the Braddock campaign he remarks that "immediately upon our leaving the camp at George's Creek, on the 14th . . . I was seized with violent fevers and pains in my head, which continued without intermission 'till the 23rd following, when I was relieved, by the General's absolutely ordering the physicians to give me Dr. James' powders, one of the most excellent medicines in the world, for it gave me immediate ease, and removed my fevers and other complaints in four days' time. (Incidentally, this marvelous medicine consisted of antimony and calcium phosphate.) My illness was too violent to suffer me to ride; therefore I was indebted to a covered wagon for some part of my transportation; but even in this I could not continue far, for the jolting was so great, I was left upon the road with a guard, and necessities, to await the arrival of Colonel Dunbar's detachment." This illness was probably an influenzal infection, as his servant contracted it at the same time. On his return home he wrote to his brother: "I am not able, were I ever so willing, to meet you in town, for I assure you it is with some

difficulty, and with much fatigue, that I visit my plantations in the Neck; so much has a sickness of five weeks' continuance reduced me." At 25 years of age he suffered from a severe attack of dysentery and fever, so that he was forced to leave the army. Later he wrote: "I have never been able to return to my command, my disorder at times returning obstinately upon me, in spite of the efforts of all the sons of Aesculapius, whom I have hitherto consulted. At certain periods I have been reduced to great extremity, and have too much reason to apprehend an approaching decay, being visited with several symptoms of such a disease. . . . I am now under a strict regimen, and shall set out tomorrow for Williamsburg to receive the advice of the best physician there. My constitution is certainly greatly impaired, and . . . nothing can retrieve it, but the greatest care and the most circumspect conduct." In 1758 pulmonary symptoms made him suspect tuberculosis. Three years later he was attacked by what may have been malaria. To rid himself of this disability he went to Warm Springs. He said that he "was much overcome with the fatigue of the ride and weather together. However, I think my fevers are a good deal abated, although my pains grow rather worse, and my sleep equally disturbed. What effect the waters may have upon me I can't say at present, but I expect nothing from the air; this certainly must be unwholesome. I purpose staying here a fortnight and and longer if benefitted." Subsequently his condition grew worse and he believed himself to be "very near my last gasp. The indisposition . . . increased upon me, and I fell into a very low and dangerous state. I once thought the grim king would certainly master my utmost efforts, and that I must sink in spite of a noble struggle; but thank God, I have now got the better of the disorder, and shall soon be restored, I hope, to perfect health again." In 1768 and 1769 he had again malaria and dysentery. During the revolution, while in camp at Morristown, he was very ill with what appeared to be quinsy and was "cupped in the head." He seems to have been free from ailments until 1786. According to his diary he was "Seized with an ague before six o'clock this morning after having labored under a

fever all night. Sent for Dr. Craik who arrived just as we were setting down to dinner; who, when he thought my fever sufficiently abated gave me a cathartick and directed the Bark to be applied in the Morning. September 2. Kept close to the house today, being my fit day in course lest any exposure might bring it on. —happily missed it. September 14. At home all day repeating dozes of Bark of which I took 4 with an interval of 2 hours between." In 1787 he had "a rheumatic complaint which has followed me more than six months, is frequently so bad that it is sometimes with difficulty I can raise my hand to my head or turn myself in bed." In 1789, while on his visit to Boston he contracted a bad cold, of which he says: "Myself much disordered by a cold, and inflammation in the left eye." The severe outbreak of influenza which raged in Boston at that time has been known since then as the Washington Influenza. A few months later, during his residence in New York, he became disabled because of a carbuncle on his thigh. Some have thought that it was anthrax. The condition was alarming. He was ill thirteen weeks, with Dr. Samuel Bard in attendance. He said to Dr. Bard: "Do not flatter me with vain hopes. I am not afraid to die and therefore can bear the worst. Whether to-night or twenty years hence, makes no difference. I know that I am in the hands of a good Providence." He wrote in July of the same year: "My health is restored, but a feebleness still hangs upon me. I am as yet much incommoded by the incision which was made in a very large and painful tumor on the protuberance of my thigh." In 1790 he had an attack of pneumonia, regarding which he wrote to Dr. David Stuart: "I feel the remains of a violent affection of my lungs; the cough, pain in my breast and shortness of breathing not entirely having left me." He also remarked: "A third attack more than probably will put me to sleep with my fathers. At what distance this will be I know not." In 1793 Jefferson wrote to Madison: "The President is not at all well, little lingering fevers have been hanging about him for a week or ten days affecting his looks most remarkably." He is said to have been operated on for cancer in 1794. During 1797 his malaria returned, and he lost twenty pounds

in weight. The likelihood of his fevers having been due to tuberculosis has to be considered, as he had a bad family history and several attacks of pleurisy and pneumonia. He first put on glasses for reading in 1778. At an assembly in 1783 he addressed the army officers present, in the following words, before reading his manuscript: "Gentlemen, you will permit me to put on my spectacles, for I have not only grown gray, but almost blind, in the service of my country." His teeth started to trouble him when he was 22 years old. At 57 he was using false teeth, and he had his last tooth extracted at the age of 63. Some of his artificial dentures were badly fitted, so that when Stuart painted his picture, he placed cotton between his lips and his teeth, to improve the facial appearance. His hearing gradually deteriorated, so that Maclay speaking of the President's appearance at one of the public dinners in 1789, said: "He seemed in more good humor than I ever saw him, though he was so deaf that I believe he heard little of the conversation." Dr. Walter A. Wells who made a very complete study of Washington's ailments notes that the gastro-intestinal, circulatory and respiratory systems were involved, as evidenced in attacks of dysentery, malaria, respiratory affections, rhinitis and tonsillitis. Frequent coryza and headaches point to a sinus involvement. The early decay of the teeth may have been connected with disease of the maxillary sinuses, and attacks of rheumatism and arthritis may have been the result of absorption from the same source.

Spark in his "Life of Washington" says: "Since his retirement from the Presidency, his health had been remarkably good; and although age had not come without its infirmities, yet he was able to endure fatigue and make exertions of body and mind with scarcely less ease and activity than he had done in the prime of his strength."

A great storm of indignation swept throughout the country following Washington's last illness and death. Much was said in condemnation of the medical treatment, and abuse was heaped not only upon his attending physicians, but also upon the medical profession in general. On the other hand, medical commentators have taken great pains to go to the

defense of his doctors. While it is true that their treatment was in accordance with the best teachings of their time, it is practically certain that, due to the vast progress made in the art and science of medicine since then, procedures instituted in a similar case at the present time would most likely be productive of a better result.

According to Colonel Lear, Washington was riding about his farm on December 12th, 1799, from ten o'clock in the morning until three in the afternoon. The weather was bad, "rain, hail and snow falling alternately with a cold wind." On Washington's return his neck appeared wet, and snow was hanging upon his hair. He came to dinner without changing his clothes. Friday, December 13th, he did not go out in the forenoon, because he had contracted a cold and had a severe sore throat. He went out in the afternoon to mark some trees which were to be cut down. His "hoarseness increased in the evening, but he made light of it. He spent the evening reading the papers, and when he met anything interesting, he read it as loud as his hoarseness would permit." To Colonel Lear's suggestion that he take something for his cold, he replied: "No, you know I never take anything for a cold. Let it go as it came." Next morning at about three o'clock he told Mrs. Washington that he was very unwell and that he had an ague. He could scarcely speak, and he breathed with difficulty. At day-break he was dyspnoeic and was hardly able to utter a word intelligibly. "A mixture of molasses, vinegar and butter was offered him, but he could not swallow a drop, and when he attempted, he appeared to be distressed, convulsive and almost suffocated." Rawlins, the overseer of the farm, was sent for. When Washington asked him to bleed him, he became very nervous. To put him at ease, the general said: "Don't be afraid." Rawlins made the incision, and Washington remarked: "The orifice is not large enough." However the blood flowed freely, but Mrs. Washington became alarmed, as there were no physicians in attendance, and asked that the bleeding be stopped, whereas the General murmured "more—more." One pint of blood was removed without any relief. Sal Volatile was applied to his neck and heat to his lower ex-

tremities. The patient complained of his throat being very sore. At about eight o'clock he arose and stayed up about two hours. Then Dr. Craik, his old friend and attending physician arrived. He applied a cantharides blister to the neck, took blood again and prescribed a gargle of vinegar and sage tea; also vinegar and steam inhalations. Washington nearly choked when using the gargle. He brought up a little phlegm. At eleven o'clock blood letting was repeated, without any apparent relief. Two consultants were sent for, Dr. Elisha Cullen Dick, an outstanding practitioner of Alexandria and Dr. Gustavus Richard Brown of Port Tobacco, Maryland. It seems in order to say a few words about Washington's physicians. Dr. James Craik was born in Scotland in 1731 and was a graduate of the University of Edinburgh. He arrived in Virginia in the year 1751. He had extensive medico-military experience and had been closely connected with Washington during his campaigns, as well as socially as friend and physician. Dr. Dick, born in Pennsylvania in 1750, had an excellent education and was a graduate of the University of Pennsylvania. Dr. Brown, born in Maryland in 1747, had graduated from the University of Edinburgh in 1768. Dr. Benjamin Rush of Philadelphia said of him: "He was not second to any student at the University at that period." In 1776 he established a hospital for inoculations against smallpox. He was both a friend and a neighbor of George Washington. The consultants arrived at about three o'clock in the afternoon. The General was bled once more, the blood coming "slow and thick," but the patient did not faint. Calomel and Tartar Emetic were administered without effect. At 4:30 Washington gave directions about his will. At 5 he sat up for a half hour. He seemed to be in great pain and very dyspnoeic. He was pessimistic about his illness and had made up his mind that he was going to die, doing what he could to dissuade his physicians from making special efforts and asking them to let him die in peace. He said to Colonel Lear: "I find I am going. My breath cannot last long. I believed from the first that the disorder would prove fatal." Later he said to Dr. Craik: "Doctor, I die hard, but I am not afraid to go. I believed

from the first attack that I should not survive it. My breath cannot last long." To Dr. Brown later he remarked: "I feel myself going; I thank you for your attention, but I pray you take no more trouble for me. I cannot last long." At eight o'clock a blister and catplasm of wheat bran and vinegar were applied to his legs and feet. His breathing became easier shortly before death, which took place at about eleven o'clock.

The following statement by the attending physicians, Doctors Craik and Dick, was published in "The Times" of Alexandria, December 19, 1799:

"Some time in the night of Friday, the 13th inst., having been exposed to rain on the preceding day, General Washington was attacked with an inflammatory affection of the upper part of the windpipe, called in technical language, cynanche trachealis. The disease commenced with a violent ague accompanied with some pain in the upper and fore part of the throat, a sense of stricture in the same part, a cough, and a difficult rather than painful deglutition, which were soon succeeded by fever and a quick and laborious respiration. The necessity of blood-letting suggesting itself to the General, he procured a bleeder in the neighborhood, who took from the arm in the night, twelve or fourteen ounces of blood; he would not by any means be prevailed upon by the family to send for the attending physician till the following morning, who arrived at Mount Vernon at eleven o'clock on Saturday morning. Discovering the case to be highly alarming, and foreseeing the fatal tendency of the disease, two consulting physicians were immediately sent for, who arrived one at half past three and the other at four, in the afternoon. In the interim were employed two copious bleedings; a blister was applied to the part affected, two moderate doses of calomel were given, an injection was administered which operated on the lower intestines, but all without any perceptible advantage, the respiration becoming still more difficult and distressing. Upon the arrival of the first of the consulting physicians, it was agreed, as there were yet no signs of accumulation in the bronchial vessels of the lungs, to try the result of another bleeding, when about thirty-two ounces were drawn,

without the smallest apparent alleviation of the disease. Vapors of vinegar and water were frequently inhaled, ten grains of calomel were given, succeeded by repeated doses of emetic tartar, amounting in all to five or six grains, with no other effect than a copious discharge from the bowels. The powers of life seemed now manifestly yielding to the force of the disorder. Blisters were applied to the extremities, together with a cataplasm of bran and vinegar to the throat. Speaking, which was painful from the beginning, now became almost impracticable, till half after eleven o'clock on Saturday night, retaining full possession of the intellect, he expired without a struggle.

"He was fully impressed at the beginning of the complaint as well as through every succeeding stage of it, that its conclusion would be fatal, submitting to the several exertions made for his recovery, rather as a duty than from any expectation of their efficacy. He considered the operation of death upon his system as coeval with the disease; and several hours before his decease, after repeated efforts to be understood, succeeded in expressing a desire that he might be permitted to die without interruption.

"During the short period of his illness he economized his time in the arrangement of such few concerns as required his attention, with the utmost serenity, and anticipated his approaching dissolution with every demonstration of that equanimity for which his whole life had been so uniformly and singularly conspicuous.

James Craik,

Attending Physician.

Elisha C. Dick,

Consulting Physician.

"The signature of Doctor Gustavus Brown, of Port Tobacco, who attended as consulting physician, on account of the remoteness of his residence from the place, has not been procured for the foregoing."

It is evident that there was a disagreement between the consultants. In a letter to Dr. Craik, Dr. Brown states that Dr. Dick was not in favor of the bloodletting; that the patient's strength should not have been diminished by the bleedings. He also says: "We were

governed by the best light we had; we thought we were right and so we were justified." Dr. Dick wrote at about the same time: "The statement which I drew up at the request of Dr. Craik is as ample, perhaps, as it was necessary or proper to present to the public eye, though it may subject us all to a censure from which I might claim exemption." He said that when the last bleeding was found to be ineffective, he proposed to perforate the trachea as a means of prolonging life and for affording time for the removal of the obstruction to respiration in the larynx which manifestly threatened speedy dissolution. He urged this strongly and offered to assume the responsibility for the procedure, but the other consultants did not agree. With reference to this suggestion it should be born in mind that tracheotomy was known in Washington's time. Opening of the trachea was practiced even in the most ancient times. Hume of Edinburgh recommended "bronchotomy," as it was then called, in 1756 for the relief from suffocation in pseudo-membranous croup. The first recorded instance of its use in such a condition is by Andree of London in 1782. In the year preceding Washington's death Desault and Bichat of Paris described the surgical operation of tracheotomy, but did not recommend it in any form of angina. In 1807 Louis Napoleon, whose oldest son died from croup, offered a prize of 12,000 francs for the best essay on the subject. It was the unanimous opinion then that tracheotomy was of no avail in such cases. In 1826 following publication of Bretonneau's article on Laryngeal Diphtheria, tracheotomy was begun to be considered a justifiable operation.

Dr. James Jackson, Professor Emeritus of Medicine, Harvard University, published in 1860 a Memoir on the Last Sickness of George Washington. He diagnosed the illness as Acute Laryngitis, which he said was a rare disease—in contradistinction to a common cold. In 1810 this affection was described by Matthew Baillie of London, who reported three cases of inflammation of the larynx involving adjacent parts and not limited to the mucous membrane, but spreading to the underlying tissues and producing, because of the inflam-

matory edema, hoarseness or aphonia, difficulty and pain in swallowing, and, worst of all, dyspnoea depending on the degree of obstruction of larynx and trachea. The treatment in Washington's case consisted of bleeding, blistering, calomel and antimony. Dr. Baillie in 1810 directed in his cases bleeding, general and local. Dr. Jackson says that, in 1860 the best teachers still recommend bleeding and blistering. The English teachers advise use of mercurials carried to the point of salivation. Some add antimony and opium to the calomel. He mentions Dr. Watson of London who recommended in his lectures on the theory and practice of medicine: "Bleeding freely at an early period of acute laryngitis." Referring to the treatment of Washington he remarks: "Bleeding was resorted to early, but that bleeding was nominal. Mrs. Washington objected because the bleeding was not done by a physician, "but of course," Dr. Jackson says, "she did not understand the nature of the disease; she did not suspect how rapidly it was pressing forward to a fatal termination." Further on he says: "Although bloodletting is the great remedy, there are other modes of treatment which may be employed in aid of it, or, without it." And again: "Passing by some other modes of treatment for acute laryngitis, we should not omit to notice one, on which much reliance is placed at the present day when it becomes obvious that all other remedies are ineffectual. This consists in an opening into the trachea, below the diseased part. In this way life may be prolonged, while a chance is afforded for the subsidence of the disease by a natural process, after which the wound may be allowed to heal up. This practice has been resorted to with success in various instances of obstruction of the windpipe, and especially of late in croup."

The lay critics ascribed Washington's death to the loss of blood from the repeated use of the lancet. Ford, in his book "The True Washington" remarks: "There can scarcely be a doubt that the treatment of his last illness by the doctors was little less than murder." Referring to this statement Dr. W. A. Wells writes in *The Virginia Medical Monthly*, January, 1927: "Such brutal cocksureness of

statement could emanate only from an opinionated layman, ignorant of the possibilities of such a case." He continues: "Admitting the possibility that the blood-letting was a contributory factor, no blame can properly be attached to Washington's physicians on that account. They were following the best authorities, instituted treatment orthodox in that day and, indeed, widely practised for the following forty or fifty years."

Both Drs. Craik and Brown, as previously mentioned were graduates of the University of Edinburgh and in their treatment of Washington followed closely the teachings of William Cullen, Professor of Medicine at the University of Edinburgh, who in 1778 described a condition then known as *Cynauche trachealis*, in the following words: "An inflammation of the glottis, larynx or upper part of the trachea . . . known by a peculiar croaking sound of the voice, by difficult respiration, with a sense of straightening about the larynx and by an attending pyrexia—and frequently produces such an obstruction of air as suffocates and thereby proves suddenly fatal." Regarding the treatment, he says: "As we suppose the disease to be an inflammatory affection, so we attempt a cure of it by the usual remedies of inflammation, and which for the most part we have found effectual. Bleeding both topical and general, has often given almost immediate relief, and by bleeding repeatedly has entirely cured the disease. Blistering also near the point affected, has been found useful. Upon a first attack of the disease, an antiphlogistic requirement is necessary, and particularly the frequent use of laxatives. Though we suppose that a spasm of the glottis is often fatal in this disease, we have not found antispasmodic remedies to be of any use."

Discussing the differential diagnosis in Washington's last illness, Wells has ruled out ordinary acute laryngitis, quinsy, laryngeal diphtheria, pneumonia, cancer or tuberculosis. His diagnosis is acute inflammatory edema of the larynx, a disease attacking tissue beneath the mucous membrane, "characterized by a painful swelling of the structures of the larynx and the adjacent tissues below and above, in-

cluding the epiglottis, causing difficulty and pain in swallowing." Regarding the treatment he notes that bleeding was a widespread practice at the time of Washington, and his death was not due to excessive bleeding, but it was the inevitable consequence of a relentless encroachment of the inflammatory swelling upon the narrow passageway of the glottis, cutting off the vitally necessary supply of oxygen, and associated no doubt with a general toxic infection from some virulent micro-organism, most likely a streptococcus. Washington then was not bled to death; rather it may be said that he choked to death, for death was due primarily to suffocation.

In Osler's *Medicine* the condition under discussion is described as edematous laryngitis. The following treatment is recommended: "An ice-bag should be placed on the larynx and the patient given ice to suck. The air of the room should be moist. If the symptoms are urgent, the throat should be sprayed with a strong solution of cocaine and epinephrine (1 to 1000) and the swollen epiglottis scarified. If relief does not follow, tracheotomy should immediately be performed. The high mortality is due to the fact that this operation is, as a rule, too long delayed.

Ballenger recommends in phlegmonous laryngitis, scarifications of the edematous mucous membrane by means of the laryngeal lancet, or preferably repeated puncture to increase leucocytosis. Tracheotomy if suffocation becomes imminent.

The relatively recent introduction of sulfanilamide, sulfathiazole, etc., is unquestionably a valuable addition to our medical armamentarium in throat infections.

In view of the fact that most of the newer methods of diagnosis and treatment, including laryngoscopic examination were not available to Washington's physicians, there seems to be no justification in unfavorable criticism of their efforts in his behalf.

The material for this paper has been compiled from various sources and grateful acknowledgment for its use is made hereby.

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BOOK REVIEW

Occupational Diseases

Diagnosis, Medicolegal Aspects and Treatment

Rutherford T. Johnston, A.B., M.D.
W. B. Saunders Company

This book covers all phases of occupational diseases and injuries including diagnosis, treatment and prevention as well as compensation, liability and medicolegal aspects.

Part I. Gives compensation laws, methods of determining disability, and the physician's function in this.

Part II. Effects of gases, solvents and fumes.

Part III. Effects of metals.

Part IV. Effects of dusts.

Part V. Discusses the Industrial Back and Hernia.

Part VI. The Dermatoses.

Part VII. Industrial Cancer, heat and climatic affections, Electrical Injuries and Caisson Disease.

Part VIII. The Medicolegal Relationship of Trauma to Disease—Malingering—and the Preemployment Examination.

The Appendix contains a table of Toxic Thresholds of Common Industrial Substances.

Each discussion contains several case reports which add much to its completeness. With the increased attention being given to industry these days a book of this type becomes a necessity in every physician's office. This book can be relied on to fill that need.

C. L. G.

THE JOURNAL

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FEBRUARY, 1942

SHALL WE BUILD OR DESTROY?

It is easier to destroy than it is to build. It is easier to kill than it is to nourish.

How clearly these simple truths are demonstrated for us today in the holocaust of war. A cathedral, centuries in the making, is destroyed in a flash by the explosion of a bomb. A youth in his prime, man's greatest achievement and the summation of thousands of years of human struggle against the forces of ignorance and disease and immorality, lies cold in death at the blast of a machine gun's fire. A little home, with parents and children gathered around the hearth, is torn asunder by the ravages of Mars and with it goes the greatest force for good which exists in the world today.

Yes, it is easier to destroy than it is to build, and this must ever be borne in our minds and hearts as we face today and tomorrow.

Under the guise of necessity or expediency or patriotism, propositions will be advanced and plans will be formulated to care for a temporary need. To all appearances, these suggestions and changes are of immediate value and there is nothing in them which meets the eye on superficial glance that warns of trouble in the days to come. Closer examination, however, shows that they are fraught with danger and, like the delayed bomb, may subsequently explode with the partial or complete destruction of that thing which has taken years or decades to build.

This truth, evident in all fields of human endeavor, is doubly apparent in the field of medicine and medical care. There will be a shortage of physicians in the days to come—so let us shorten our courses, lower our standards slightly, and turn more grist out of the mill. We will need more nurses—so let us lower our requirements, establish more schools even though the facilities for training are far below the accepted standard, and we will have more nurses even if they are not so thoroughly trained. We will need more medical care than physicians can give—so let us take some of the work which physicians have been doing and turn it over to those who have not been trained. We need a better distribution of medical care and the present plan seems to have failed—so let us throw the present plan overboard, place the entire problem of medical care in the hands of the state and parcel out medical services as we do groceries. These are the suggestions which are being made to care for our immediate needs.

That there are problems of tremendous magnitude in the field of medical care which must be met, that present methods are inadequate and need change, that physicians individually and collectively must lay aside their apparent passive resistance to all suggestions of change and assume their rightful place in the vanguard of those who are making preparations for the future—this we believe. We further believe that no one is better acquainted with medical affairs than the practicing physician and that the greatest need of the country today is for physicians to take their rightful place in the councils of those who are planning for the days to come.

Editors State Medical Journals

Secretaries State Medical Associations

Inasmuch as this material represents one of the most important responsibilities of the medical profession at the present time, it is the opinion of the Assignment and Procurement Service that it deserves the most prominent place in your Journal it can be given. It is of equal importance to doctors themselves since it clarifies quite largely the demands which will be made upon the medical profession.

Sincerely yours,

Frank H. Lahey, M.D., Chairman

Harvey B. Stone, M.D.

James E. Paullin, M.D.

Harold S. Diehl, M.D.

C. Willard Camalier, D.D.S.

Sam E. Seeley, M.D.,

Executive Officer.

RECOMMENDATIONS TO ALL PHYSICIANS WITH REFERENCE TO THE NATIONAL EMERGENCY

I. MEDICAL STUDENTS

A. All students holding letters of acceptance from the Dean for admission to medical colleges and freshmen and sophomores of good academic standing in medical colleges should present letters or have letters presented for them by their deans to their local boards of the Selective Service System. This step is necessary in order to be considered for deferment in Class II-A as a medical student. If local boards classify such students in Class I-A, they should immediately notify their deans and if necessary exercise their rights of appeal to the Board of Appeals. If, after exhausting such rights of appeal, further consideration is necessary, request for further appeal may be made to the State Director and if necessary to the National Director of the Selective Service System. These officers have the power to take appeals to the President.

B. Those junior and senior students who are disqualified physically for commissions are to be recommended for deferment to local boards by their deans. These students should enroll with the Procurement and Assignment Service for other assignment.

C. All junior and senior students in good

standing in medical schools, who have not done so, should apply immediately for commission in the Army or the Navy. This commission is in the grade of Second Lieutenant, Medical Administrative Corps of the Army of the United States, or Ensign H. V. (P) of the United States Navy Reserve, the choice as to Army or Navy being entirely voluntary. Applications for commission in the Army should be made to the Corps Area Surgeon of the Corps Area in which the applicant resides and applications for commission in the Navy should be made to the Commandant of the Naval District in which the applicant resides. Medical R. O. T. C. students should continue as before with a view of obtaining commissions as First Lieutenants, Medical Corps, upon graduation. Students who hold commissions, while the commissions are in force, come under the jurisdiction of the Army and Navy authorities and are not subject to induction under the Selective Service Act. The Army and Navy authorities will defer calling these officers to active duty until they have completed their medical education and at least 12 months of internship.

II. RECENT GRADUATES

Upon successful completion of the medical college course, every individual holding commission as a Second Lieutenant, Medical Administrative Corps, Army of the United States, should make immediate application to the Adjutant General, United States Army, Washington, D. C., for appointment as First Lieutenant, Medical Corps, Army of the United States. Every individual holding commission as Ensign H. V. (P), U. S. Navy Reserve, should make immediate application to the Commandant of his Naval District for commission as Lieutenant (J. G.) Medical Corps Reserve, U. S. Navy. If appointment is desired in the grade of Lieutenant, (J. G.) in the regular Medical Corps of the U. S. Navy, application should be made to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

III. TWELVE MONTHS INTERNES

All internes should apply for a commission as First Lieutenant, Medical Corps, Army of the United States, or as Lieutenant (J. G.),

United States Navy or Navy Reserve. Upon completion of 12 months internship, except in rare instances where the necessity of continuation as a member of the staff or as a resident can be defended by the institution, all who are physically fit may be required to enter military service. Those commissioned may then expect to enter military service in their professional capacity as medical officers; those who failed to apply for commission are liable for military service under the Selective Service Acts.

IV. HOSPITAL STAFF MEMBERS

Internes with more than 12 months of internship, assistant residents, fellows, residents, junior staff members, and staff members under the age of 45, fall within the provisions of the Selective Service Acts which provide that all men between the ages of 20 and 45 are liable for military service. All such men holding Army commissions are subject to call at any time and only *temporary deferment* is possible, upon approval of the application made by the institution to the Adjutant General of the United States Army certifying that the individual is temporarily indispensable. All such men holding Naval Reserve commissions are subject to call at any time at the discretion of the Secretary of the Navy. Temporary deferments may be granted only upon approval of applications made to the Surgeon General of the Navy.

All men in this category who do not hold commissions should enroll with the Procurement and Assignment Service. The Procurement and Assignment Service under the Executive Order of the President is charged with the proper distribution of medical personnel for military, governmental, industrial, and civil agencies of the entire country. All those so enrolled whose services have not been established as essential in their present capacities will be certified as available to the Army, Navy, governmental, industrial, or civil agencies requiring their services for the duration of the war.

V. ALL PHYSICIANS UNDER FORTY-FIVE

All male physicians in this category are liable

for military service and those who do not hold commissions are subject to induction under the Selective Service Acts. In order that their service may be utilized in a professional capacity as medical officers, they should be made available for service when needed. Wherever possible, their present positions in civil life should be filled or provisions made for filling their positions, by those who are (a) over 45, (b) physicians under 45 who are physically disqualified for military service, (c) women physicians, and (d) instructors and those engaged in research who do not possess an M.D. degree whose utilization would make available a physician for military service.

Every physician in this age group will be asked to enroll at an early date with the Procurement and Assignment Service. He will be certified for a position commensurate with his professional training and experience as requisitions are placed with the Procurement and Assignment Service by military, governmental, industrial or civil agencies requiring the assistance of those who must be dislocated for the duration of the national emergency.

VI. ALL PHYSICIANS OVER FORTY-FIVE

All physicians over 45 will be asked to enroll with the Procurement and Assignment Service at an early date. Those who are essential in their present capacities will be retained and those who are available for assignment to military, governmental, industrial or civil agencies may be asked by the Procurement and Assignment Service to serve those Agencies.

The maximal age for original appointment in the Army of the United States is 55. The maximal age for original appointment in the Naval Reserve is 50 years of age.

All inquiries concerning The Procurement and Assignment Service should be sent to The Executive Officer, 5654 Social Security Building, 4th and Independence Avenues, SW, Washington, D. C., and not to individual members of the Directing Board or of committees thereof.

AROUND THE STATE

Effort will be made to secure and publish news concerning the activities of individual physicians, and of the various medical societies of the state. Members of the Association, and especially secretaries of county societies, are urged to send in news items to the Editor.

SCIENTIFIC COMMITTEE

The Scientific Committee of the South Carolina Medical Association met in Orangeburg on January 16, and were the guests of Dr. George Truhack, President of the Association, at a steak dinner.

Dr. N. B. Heyward, chairman, presided over the discussions and plans were made for the Annual Meeting to be held at Myrtle Beach, May 19-21. Certain changes in the program were made so as to make the meeting of greater general interest.

Members who wish to present papers should submit title and outline to Dr. N. B. Heyward, Columbia, at an early date.

The members of the Scientific Committee, in addition to Drs. Heyward and Truhack, are: Drs. William Weston, Columbia, A. P. Traywick, Cameron, D. F. Adcock, Columbia, L. C. Shecut, Orangeburg, W. R. Tuten, Fairfax, and J. P. Price, Florence, Secretary.

DEATHS

Dr. Burk McLaughlin of Dalzell died on December 20th from injuries sustained in an automobile accident.

Dr. McLaughlin was born in Richland County in 1866 and was a graduate of the University of Virginia Medical School. He is survived by his wife and three daughters and three sons.

Dr. Edward Rutledge, one of Charleston's leading physicians and an Honorary Fellow of the South Carolina Medical Association, died at his home on January 9. A native of Charleston, Dr. Rutledge was graduated from Virginia Military Institute in 1891 and from the Medical College of the State of South Carolina in 1896. For many years Dr. Rutledge carried on, in addition to a large practice, the position of physician and surgeon for the Charleston Fire Department and physician and surgeon for the City Orphan Home. From

1900 to 1913 Dr. Rutledge was Instructor in Anatomy at the Medical College and from 1913 until his retirement he was Professor of Clinical Medicine. After his retirement he was Professor Emeritus.

Dr. Rutledge is survived by his wife and three daughters.

Dr. Jesse H. Teague, prominent Laurens physician and civic leader and an Honorary Fellow of the South Carolina Medical Association died on January 5th. Dr. Teague was a native of Laurens County and received his academic education at the University of Nashville and was graduated in medicine from the University of Maryland in 1900. After receiving his Medical Degree he opened an office in Laurens and practiced there until his death. In addition to his medical work he was interested in many outside activities and served as Chairman of the Board of Trustees of the Laurens City Schools.

Dr. Teague is survived by his widow, two sons and two daughters. One of his sons, Dr. Martin M. Teague, is practicing medicine in Laurens.

Dr. Samuel C. Ketchin died at his home in Louisville, Georgia, December 21st. Dr. Ketchin was a native of Winnsboro and was a graduate of the Medical College of the State of South Carolina.

Dr. William Lamar Bryan, Jr., of the University of South Carolina faculty, died at the Providence Hospital in December. Dr. Bryan and his wife, Dr. Margaret Bryan, were the University physicians. Dr. Margaret Bryan will continue in this work for the present.

News has been received of the death of Dr. David Rufus Kneece, 82, Batesburg, South Carolina. Dr. Kneece was one of the oldest physicians in South Carolina having practiced for more than fifty-five years. He is survived by his wife, six children and twelve grandchildren. One of his sons, Dr. J. F. Kneece, is now practicing at Blackville.

NEWS ITEMS

EMERGENCY MEDICAL SERVICE

More than fifty physicians, representing every county in the state, met in Columbia on December 31 to discuss plans for organizing medical service in each county.

Dr. Grady Callison, chief medical officer of the South Carolina Council for Medical Defense, presided.

Talks were made by Major C. Heyward Mahon, Director of the South Carolina Council for National Defense; Dr. Adam Hayne, State Health Officer, and Lieut. Col. Ragnar E. Johnson, chemical officer at Fort Jackson.

The following men participated in the general discussion: Dr. Floyd Rogers of Columbia, Dr. Robt. Wilson, Jr. of Charleston, Dr. C. O. Bates of Greenville, Dr. E. M. Dibble of Marion, Dr. W. L. Byerly of Hartsville, and Dr. Preston Edwards of Conway.

Friends of Dr. A. E. Shaw of Columbia will regret to know that he is still confined to his bed from a fall resulting in a back injury December 4, 1941.

Dr. and Mrs. Leon S. Bryan are receiving congratulations on the birth of their son at the Providence Hospital, Columbia, January 15, 1942.

Dr. Kenneth M. Lynch of Charleston, suffered an accident while on a hunting trip at Liberty Hall. The result was a fracture of the leg.

Dr. and Mrs. J. D. Whitehead of Lake City, announce the birth of a son, James Dudley Whitehead, Jr.

Dr. Roderick McDonald of Rock Hill has an operating and teaching fellowship at Yale University for the present year. He has been at this institution for the past six months.

Dr. W. L. Pressley has been appointed Chairman of South Carolina Assignment and Procurement Service.

A new two story brick nurses home at the Oconee County Hospital is almost completed.

Dr. L. D. Boone of Aiken, who has been a patient at the Columbia Hospital, is now at home recuperating.

During the absence of Dr. Roderick McDonald of Rock Hill, who has a fellowship at Yale University for the present year, Dr. James R. DesPortes of Fort Mill, has been selected to serve on the Board of Councilors.

Dr. W. T. Barron of Columbia is connected with the Urological Department of the Station Hospital at Fort Jackson, S. C.

Dr. George Benet underwent an operation at the Columbia Hospital Monday, January 12th. His many friends are delighted to hear that he is convalescing nicely.

The official list of the officers of the Southern Medical Association shows the following South Carolinians holding office:

J. Warren White, Greenville, Member of Council. J. W. Jervey, Sr., Greenville, Member of Board of Trustees. W. L. Pressley, Due West, Vice-Chairman, Section on General Practice. William H. Kelley, Charleston, Secretary, Section on Medicine. William Weston, Jr., Columbia, Secretary, Section on Pediatrics. Robt. E. Seibels, Columbia, Chairman, Section on Obstetrics. J. W. Jervey, Jr., Secretary, Section of Ophthalmology and Otolaryngology. Mrs. Ruth George, Columbia, Second Vice-President, Southern Branch of American Public Health Association.

NEWLY ELECTED OFFICERS

Allendale County Medical Society

Dr. W. R. Tuten, Fairfax, President

Dr. W. H. Breeland, Allendale, Vice President

Dr. A. B. Preacher, Allendale, Secretary
Treasurer

Cherokee County Medical Society

Dr. J. N. Nesbitt, Gaffney, President

Dr. J. P. Thomas, Gaffney, Vice President

Dr. J. H. Cathcart, Gaffney, Secretary-Treasurer	Dr. T. G. Hall, Westminster, Vice President
Chesterfield County Medical Society	Dr. R. F. Zeigler, Seneca, Secretary-Treasurer
Dr. J. P. Harrison, Cheraw, President	Sumter County Medical Society
Dr. D. C. Griggs, Pageland, Vice President	Dr. W. J. Snyder, Jr., Sumter, President
Dr. Wm. L. Perry, Chesterfield, Secretary-Treasurer	Dr. N. O. Eaddy, Sumter, Vice President
Greenwood County Medical Society	Dr. J. R. Dunn, Sumter, Secretary-Treasurer
Dr. C. H. Workman, McCormick, President	Union County Medical Society
Dr. W. A. Simpson, Greenwood, Vice President	Dr. A. P. McElroy, Union, President
Dr. Wm. C. Alston, Jr., Greenwood, Secretary-Treasurer	Dr. P. K. Switzer, Union, Vice President
Newberry County Medical Society	Dr. F. P. Salley, Union, Secretary-Treasurer
Dr. Hugh Senn, Newberry, President	York County Medical Society
Dr. V. A. Long, Prosperity, Vice President	Dr. E. E. Strong, York, President
Dr. J. C. Sease, Newberry, Secretary-Treasurer	Dr. T. N. Dulin, Clover, Vice President
Oconee County Medical Society	Dr. N. G. Quantz, Rock Hill, Secretary-Treasurer
Dr. G. C. Sheppard, Seneca, President	Dillon County Medical Society
	Dr. B. F. Hardy, Dillon, President
	Dr. S. C. Henslee, Dillon, Secretary-Treasurer

South Carolina Medical Association

G. M. Truluck, M. D.	President
W. F. Strait, M. D.	Vice President
Thomas A. Pitts, M. D.	President-elect
Julian P. Price, M. D.	Secretary-Treasurer

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Hugh Smith, M. D., Chairman	Greenville, S. C.
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Roderick McDonald, M. D.	Rock Hill, S. C.
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James McLeod, M. D.	Florence, S. C.
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(Clarendon, Georgetown, Lee, Sumter, Williamsburg)

E. T. Kelley, M. D.	Kingstree, S. C.
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Eighth District

(Allendale, Bamberg, Barnwell, Calhoun, Hampton, Orangeburg)

L. P. Thackston, M. D.	Orangeburg, S. C.
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Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

Case of Dr. Robert Wilson, Jr.

ABSTRACT NO. 452

Present illness: 43 year old negro felt well until four days prior to admission when he developed fever and general malaise, which persisted until the day of admission. The fever seemed to be highest between 10 A. M. and 5 P. M., but there were no chills. He had no other complaint and continued to work as a filling station helper until one day prior to admission. No pain, cough, dysuria, loss of appetite or sleeplessness.

Past History: He had visited the clinic on October 2, 1941, with the complaint of exertional dyspnea and was found to have slight pitting edema of the legs and BP 160/110. He was given digitalis and returned to clinic on October 23, 1941, when his BP was 110/70, and he had no dyspnea or edema. Except for this, a Neisserian Infection and a traumatic injury to the left eye, his past medical history was not of interest. He denied having syphilis.

Family History: One brother died of T. B. ten years ago, otherwise negative.

Physical Examination: T. 101. P. 100. R. 24. BP. 160/110. Revealed a well nourished and developed colored man in no pain or distress. Head and neck: marked conjunctival injection, left pupil irregular. No jaundice. Ears normal. Nasal mucosa swollen and congested. Poor dental and oral hygiene. Tonsils moderately inflamed. Neck normal, no venous distention. Skin: hot and moist, no lesions. Glandular: generalized enlargement; soft, non-tender. Chest: symmetrical and well-formed. Lungs: impaired resonance, diminished breath sounds and fremitus over the right lower lobe. Fremitus greater over the left upper than the right upper anteriorly. Expansion and resonance seemed a little less over the left upper. Heart: not enlarged. PMI 10 cm. from the M. S. L. in the 5th left I. C. S. Sounds were of good quality, rhythm normal, no murmurs. Abdomen: flat, no tenderness or rigidity. No organs definitely palpated but the liver and spleen were questionably palpated, each by different observers. Genitalia: normal. Extremities: normal. Reflexes: normal.

Laboratory Examination:

Urinalysis: 11-19-41	12-7-41
Light yellow	Dark yellow
Sp. Gr. —	1.032
Alb. 1 plus	0
Sugar 0	2 plus
Acetone 0	0
WBC 8-10/hpf	2-3/hpf
RBC 0	3/hpf
Mic. Gr. casts	Gr. Casts
1 plus	1 plus

Blood 11-19-41	12-8-41
wbc. 4100	6700
hb. 12	14
poly 76%	—
lymph 20%	—
mono. 4%	—
Sputum—negative for T. B.	
Blood Wassermann—positive.	
Blood Culture—negative 3 times.	

Agglutination series—positive for Para A. in dilution 1/20 on 11-30-41. Positive for Para B. in dilution 1/640 on 11-20-41. Pleural fluid—negative for T. B. Guinea-pig inoculated with fluid negative for T. B.

Hospital Course: This man ran a continuous febrile, down-hill course, gradually terminating in death. On the third day, a thorocentesis was done and 75 ccs. of blood-tinged fluid was removed from the right thoracic cavity. For a while he seemed to feel better, had no complaints and his blood pressure became normal. On the 13th day his temperature became elevated to 103.8 and he became very restless. There were fine crackling rales in both bases, his respiratory rate became rapid and he began sweating profusely. Sulfathiazole was commenced but he did not respond to it and died at 8:30 A. M. on December 10, 1941, twenty-one days after admission.

Student J. J. Stokes (Presenting): There is very little that can be added to the protocol. There is some additional information about the agglutination series that may be of interest. On 11-20-41 the agglutination for Para B was positive (1 plus) in a 1/640 dilution with positive reactions of three to two plus in the stronger dilutions. On 11-22 the agglutination was 2 plus for Para B in 1/20 and 1/40 dilutions and on 11-30 this was positive in a 1/160 dilution. On this date the agglutination was for the first time positive for Para A. as is given on the protocol.

The guinea pig that was inoculated died on the 10th day, so that this cannot be taken as definite evidence against tuberculosis, even though it was negative.

Dr. Robert Wilson (Conducting): Mr. Cobb, suppose you start the discussion for us.

Student Cobb: I think the most important information about this patient is found in his hospital course. The outstanding fact here is that a thorocentesis was performed and 75 cc. of blood-tinged fluid obtained. This pleural effusion suggests one of two things, either tuberculosis or some malignancy within the thorax.

The diminished breath sounds and decreased fremitus over the right lower lobe are suggestive of

a pleural effusion. His dyspnea may have been on the basis of tuberculosis or congestive heart failure. The 2 plus sugar in the second urinalysis can be explained on the basis of the infection which caused suppression of the pancreatic enzymes.

I do not attach much significance to the agglutination tests for Para A, for we did not know whether he was exposed to these infections in his community or how recently he had received the typhoid inoculations. If he had had a Para B infection I would have suspected some abdominal symptoms and the stool cultures should have been positive. I think the diagnosis was a tuberculous pleurisy with effusion.

Dr. Wilson: Does tuberculosis ever cause dyspnea?

Student Cobb: Yes, I believe it does.

Dr. Wilson: On what basis?

Student Cobb: By a decrease in the number of the functioning alveoli, so that proper aeration cannot take place.

Dr. Wilson: What about pleurisy with effusion causing dyspnea?

Student Cobb: Yes, that is possible too.

Dr. Wilson: Yes, tuberculosis sometimes causes dyspnea and pleurisy with effusion frequently does. How would you differentiate between tuberculosis and a malignancy in the presence of blood-tinged fluid?

Student Cobb: First of all I would have to know whether the fluid was really blood-tinged or contaminated by a traumatic tap.

Dr. Wilson: How would you do this?

Student Cobb: Well, that depends largely on the person performing the thoracentesis.

Dr. Wilson: Yes, but examination of the red blood cells in the fluid to see whether or not they are crenated is helpful as is centrifugation to determine whether or not the fluid remains blood-tinged. Are there any other methods to help in differentiating between a pleural effusion due to tuberculosis and one due to malignancy.

Student Cobb: Examination of the fluid may reveal the presence of malignant tumor cells.

Dr. Wilson: Is this a simple and effective procedure?

Student Cobb: No, I believe it is a difficult procedure and does not often reward positive and definite results.

Dr. Wilson: Yes, that's true. What other tests or procedures might help?

Student Cobb: A Mantoux Test, repeated thoracentesis and sputum examinations and X rays of chest are all helpful, particularly the latter.

Dr. Wilson: A Mantoux Test was performed, but unfortunately, not read. Mr. Cobb, you believe then that this tuberculosis was a primary type. Does such a form of this disease together with a pleural effusion usually pursue such a rapidly fatal course?

Student Cobb: No, it does not. This patient probably died of a terminal pneumonia.

Dr. Wilson: Mr. Tuten, what do you think about this case?

Student Tuten: I think that what Mr. Cobb has said is true. I believe that this steady downhill febrile illness is best interpreted as being due to tuberculosis.

Dr. Wilson: What type of tuberculosis do you think it is

Student Tuten: Well, there must have been some tuberculous focus close to the pleural surface which finally broke through and contaminated the entire pleural cavity.

Dr. Wilson: 75 cc. of pleural fluid does not seem like a great deal for a person with your diagnosis.

Student Tuten: Perhaps all the fluid was not withdrawn.

Dr. Wilson: Well, let's have a look at the X-rays (Demonstrating X-ray). What do you think about that?

Student Tuten: There is apparently some fluid in the right chest and some irregular increase in density in the right lung. I don't want to commit myself further.

Dr. Wilson: Well, the radiologist stated that there was a bilateral basal effusion with mottled infiltration in the right lung. The impression given was, "We believe there is some infection in the right lung beside the effusion."

Mr. Erwin, can you offer us any more suggestions?

Student Erwin: I think it is probable that he had a paratyphoid infection which accounted for this sudden downhill course. The agglutinations, however, should have increased in intensity if he had an active process, instead of declining as they did. I believe he must have had some such infection though in spite of the peculiar behavior of the agglutination series. He certainly ran a very rapid course and it would seem that it must have been hastened by some other factor or complication.

Dr. Wilson: Do you think that any unusual feature of the tuberculosis would have accounted for it?

Student Erwin: I think he may have had an acute miliary type of tuberculosis.

Dr. Wilson: Can you bear out this impression from the X-ray?

Student Erwin: Both lungs seem rather hazy to me (laughter). I could not definitely say whether or not the small specks scattered through the lung fields are characteristic of miliary tuberculosis, for the sake of argument I'll say that they are however.

Dr. Wilson: Of what do you think he died?

Student Erwin: Probably a lobular pneumonia or a true tuberculous bronchopneumonia.

Dr. Wilson: Dr. Kelley, do you have anything to say.

Dr. Kelley: I think it is extraordinary that on October 2 he had all the signs and symptoms of heart disease with failure and then he returned to the hospital on the admission with an apparently normal heart.

Dr. Wilson: Dr. Harris, will you explain these agglutination tests for us?

Dr. Harris: I think the behavior of the Para A & B agglutinations are a very good example of what may occur to the tests when the patient is suffering from some other toxic or febrile illness. This is a typical illustration of the *anamnesic* reaction in which non-specific external or extrinsic factors cause the formation of specific antibodies. The agglutinins are effective in relatively high titre, as shown by the positive agglutination reaction which occurred for Para B in a 1/640 dilution. As the stimulating influence of the extrinsic factor declined the agglutination reaction also decreased in intensity.

Dr. Pratt Thomas (Demonstrating gross specimens): Mr. Erwin ventured out upon a limb as it were and is fortunate that it did not crack beneath

him. This man does have miliary tuberculosis. The lungs probably show this better grossly than do the other organs. As you see they are full and heavy, together weighing 3,500 gms., and their tissues are studded with myriads of tubercles. The pleural surfaces are streaked with a thick grayish-yellow organizing caseous exudate and although no fluid was present in the pleural sacs at autopsy, this may well represent the residua of the pre-existing effusion. The source of this disseminated miliary tuberculosis is apparently this ragged cavity in the right apex. Of course, there was also a good degree of tuberculous bronchopneumonia. The kidneys, liver, adrenals, spleen and prostate were all involved by the miliary spread. The pancreas and heart apparently escaped which is often the case. The brain was not involved which is rather surprising in view of the wide-spread dissemination.

The first preparation for simultaneous immunization against diphtheria and whooping cough to be made available commercially in this country is now offered by E. R. Squibb & Sons, New York, in Diphtheria Toxoid Alum Precipitated—Whooping Cough Vaccine Combined Squibb. Each 1 cc. of the combination product contains a full immunizing dose of Diphtheria Toxoid Alum Precipitated and 10,000 million killed *Bacillus (hemophilus) pertussis*.

This new product possesses the advantage of convenience and economy, and in addition, with a combined product of this type, the antibody responses of the two antigens tend to complement each other. The reactions to the combined antigens are apparently no more frequent or severe than those following the use of diphtheria toxoid alum precipitated.

To be on the safe side, it is suggested for the present that three or four injections of 1 cc. each of Diphtheria Toxoid Alum Precipitated—Whooping Cough Vaccine Combined Squibb be given at monthly intervals. This will confer a high degree of immunity to diphtheria and should afford adequate protection against whooping cough. Immunization is recommended for all children over six months of age.

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WOMAN'S AUXILIARY SOUTH CAROLINA MEDICAL ASSOCIATION

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Mrs. Richard M. Pollitzer
Greenville, S. C.

Publicity Secretary
Mrs. W. H. Lyday
Greenville, S. C.

To the members of the Woman's Auxiliary of the S. C. Medical Association:

America is at war. This means that all Americans throughout the whole country must put their shoulders to the wheel. While fathers, husbands, and sons are being called upon to defend America at the front the women of America are volunteering for Defense work at home.

It is natural that doctor's wives should be vitally conscious of the importance of health projects at this time. Many members of the Auxiliary are taking First Aid courses, Home Nursing courses and Nutrition courses under the supervision of the Red Cross. Some who are qualified have volunteered to teach these courses. Others are daily in the Red Cross rooms, making surgical dressings, serving for the needy, etc. "Every Doctor's Wife in Health Defense" has been suggested as the slogan of the Woman's Auxiliary to the American Medical Association this year.

It has been said that food will win the war. We must see that everyone has enough food and the right kind of food. Investigation shows that more than 40 million Americans, both rich and poor alike, are living below the safety line because they are not choosing the right foods to supply them with the necessary vitamins and minerals for perfect health. A survey last year showed that 71% of the children in our own state are underweight; that 90 to 95% of our school children have dental defects. We are told that thousands of farm families in South Carolina have too little of the protective foods in their diet—milk, lean meat, eggs, vegetables and fruit—all of which can be produced abundantly on the farms. Village and city diets are even worse than farm diets. Pellagra, a disease which can be prevented and cured by proper diet is still with us—2000 cases were reported last year. No records were kept of the mild hidden type

that slowly produces injury, inactivity, "laziness" and poor morale. Then there is a certain type of anemia which is widespread over the state due to a deficiency of iron in the diet. Wars breed epidemics. These bodies weakened from lack of proper food will be open to infection when they are attacked by influenza and other germs which play such a large part in winning and losing wars.

We, as the wives of physicians, are strategically placed in practically every city, town and rural community of the state to be on guard against the weakening of our defense by disease. The task before us is to make every man, woman and child health conscious.

There is much free literature available on the subject of nutrition in the offices of the American Medical Association, the Department of Agriculture in Washington, Clemson College, the State and County Health Departments.

We can distribute this literature. We can arrange lectures and secure speakers on health subjects. We can ask for health programs in our clubs, assist P. T. A. groups in providing nutritious hot lunches for school children, encourage the planting of vegetables and fruits on farms and garden plots. We can sponsor radio programs and newspaper articles on nutrition and arrange free pamphlets and charts in local libraries. We can ask local merchants to cooperate by arranging cooking and canning demonstrations under a trained nutritionist.

Should we unite for the purpose of disseminating the health knowledge available to us, we can serve our country as truly as though we were in the front line of battle.

Cora S. Pollitzer
(Mrs. R. M. Pollitzer)
President of the Woman's
Auxiliary to the South Carolina
Medical Association.

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Fractures of the Wrist

F. A. HOSHALL, M.D.
CHARLESTON, S. C.

The anatomy of the wrist should be thoroughly understood to get the best results in treatment of injuries about this joint. This is a condyloid articulation. The wrist is formed by the lower end of the radius and the articular discs which form an elliptical concavity. This portion articulates with the navicular, lunate, and lateral portion of the triquetrum. These bones are held together by the capsule and reenforced by the dorso-radio carpal, the volar radio carpal, the radial and ulnar collateral ligaments. The lower end of the radius and its articular disc form the receiving concavity and the proximal portion of the navicular and lunate the condyle. It must be remembered that the ulna does not form any part of the wrist joint but articulates with the lower end of the radius on its medial aspect.

This paper will deal primarily with fractures of the lower end of the radius and ulna. The pathology is given very briefly below.

PATHOLOGY: There are many other structures than the fractured bones to take into consideration in treatment of fractures of the wrist. The damage to the soft parts, namely the capsule and ligaments described above and in addition the numerous small arteries and veins. Even the simple transverse fracture has tearing of the ligaments and the periosteum. In the comminuted and impacted fractures the muscles particularly the pronator quadratus, the interosseus membrane, the capsule of the radio-ulnar articulation with subsequent discoloration of this joint in addition to the structures previously mentioned. The

escape of blood from the fracture site and other traumatized tissues produce pressure sufficient to retard the venous flow from the effected area, as well as distal to that area. A circulatory imbalance is established and moderate or marked swelling of wrist and fingers develops.

TREATMENT: A pre-requisite for satisfactory treatment of all fractures should be true Anterior-Posterior and Lateral X-rays. *Don't be satisfied with X-rays unless they are true A-P's and Laterals* except in most unusual cases where there are injuries to other portions of the same extremity. Also post reduction X-rays should always be done to be sure reduction has been accomplished. Treatment of simple fractures not impacted or without involvement of the radio-ulnar articulation a wood splint anterior and posterior cut the width of the wrist, forearm, and hand and snugly strapped in place with adhesive is preferable to the ill fitting anterior metal splints as the latter gives very poor immobilization. Plaster casts give the best immobilization and should be used whenever possible.

All impacted and displaced fractures should be reduced under general anesthetic. Failure to reduce permits absorption of bone at the impacted area and definite shortening of the radius with varying degrees of radial displacement results. Immobilization afterward should be with the hand in flexion and definite ulnar deviation. In other words, the articulating portion of the lower end of the radius should be in the same plane as the first metacarpal.

Nearly all of the comminuted and impacted fractures of the radius and ulna can be reduced with traction and countertraction. Rarely is manipulation necessary. Let me emphasize the importance of having an assistant in reducing fractures of the wrist. This assistant need not be a physician but may be a nurse, hospital orderly, or any lay person who has enough intelligence to follow directions. *The patient must be anesthetized to give muscle relaxation.* Without relaxation further trauma can be produced by manipulation against muscular resistance.

Local anesthesia is used by very competent men and may be used only in selected cases and with the same aseptic technique as would be used in any operative procedure but only in selected cases, those with "iron nerve" or individuals not easily upset.

After reduction, it is absolutely necessary to have the assistant hold the forearm in the position in which it is to be immobilized. For years I applied a cast from the middle of the arm to tips of fingers with elbow at right angle and the forearm in anatomical position or supination with the wrist in flexion and ulnar deviation. The flexion and ulnar deviation is necessary to restore the proper relationship between the bones of the forearm at the radioulnar joint and between the lower end of radius and the navicular and lunate bones. It is easier for untrained help to hold the forearm in pronation rather than supination and I have found that it does not make any difference in the end results.

Let me emphasize the importance of extending the casts to the tips of fingers to prevent a bottle neck constriction which may occur if the cast stops in the middle of the palm. After the first week that portion of the cast beyond the middle of the palm should be removed to allow free motion of the metacarpalphalangeal and interphalangeal joints, thereby stimulating better circulation. All patients should be urged to exercise the shoulder. Very little padding should be used except over bony prominence, the medial epicondyle, the olecranon, and the lower end of the ulna. If the swelling is extensive as soon as the plaster is set it should be split to allow for further swelling. The latter will avoid unnecessary calls for you and

discomfort for the patient. The position as described above should be maintained for at least 3 weeks, after which time this cast is removed and a forearm cast applied, the latter extends from below the elbow to the middle of the palm with the correction of the flexion but retention of the ulnar deviation for another four-six weeks or until patient has fairly firm bony union. After the latter cast is applied it should be bivalved and gentle massage, passive and active motion instigated. These exercises will greatly decrease the convalescent period and return the patient to industrial pursuits more quickly than would be obtained by leaving the cast in place for six weeks or longer.

Conservative treatment of all fractures of the lower end of the radius and ulna will give better results in fresh fractures than any operative procedure. The severely comminuted fractures of the lower end of radius and ulna, and you will note that I have said ulna because in so many fractures of the wrist the ulna acts as a splint. However, when you have badly comminuted fractures of both bones of forearm at wrist constant traction and counter traction must be maintained over number of weeks until sufficient new bone has formed to hold the fragments in place. The earliest and most satisfactory method from a mechanical standpoint and most certainly the most comfortable for the patient is the insertion of a Steinman pin in the upper end of the ulna and a small pin through the base of the distal phalanx of the thumb. A plaster cast is applied incorporating the Steinman pin in the cast, a banjo splint is then incorporated in the cast and traction is applied to the small pin through the thumb producing a *definite ulnar deviation* and excellent alignment of the fractures. The Steinman pin gives countertraction and the small pin the traction. In the badly comminuted fractures of the articulating surfaces of the radius definite hypertrophic changes can be expected but surprisingly little disability occurs with this type of treatment. *Early reduction and maintenance of ulnar deviation are the most important steps in the treatment of these fractures.*

FRACTURES OF THE CARPALS: If the fragments are not displaced, required

absolute immobilization in plaster cast for not less than two and one-half months to get healing. In fractures of the navicular the plaster cast must extend from just below the elbow to the middle of the palm and to the tip of the thumb with the latter in abduction and extension. In dealing with fractures of the carpals the lateral view rarely shows fractures, so in addition to the A P and lateral views, oblique views should also be taken.

SLIPPED EPIPHYSES: The growth center of the epiphysis at the lower end of the radius does not fuse with the shaft until at about the twentieth year. Therefore, any trauma to the epiphyseal cartilage makes very little difference to the ultimate outcome and enough disturbance can not take place to interfere with functional use. The slipped epiphyses in younger patients than eighteen years of age may produce a definite growth disturbance so that the ulna will continue to grow and displace the hand toward the radial side.

MEDICAL TREATMENT: I would like to emphasize the importance of the medical aspect in treatment of all fractures.

1. Large amounts of calcium gluconate in children at least 30 grs. t. i. d., and adults at least 60 grs. t. i. d. p. c. This is practically tasteless and may be taken in warm milk or water easily.

2. Ten to twenty drops of 10% hydrochloric

acid in water before meals will stimulate hydrochloric acid formation in the stomach. Calcium will not be utilized unless there is free hydrochloric acid in the stomach. Cod liver oil or the concentrated pearls of vitamin A and D, citrus fruits for vitamin C, plenty of fresh milk, butter, and vegetables will furnish the remaining necessary vitamins.

PHYSICAL Therapy: 1. Heat and massage after the first week.

2. Active exercises for the joints of the hand.

3. Forced exercises should not be used on stiff fingers as they increase the disability rather than decrease.

4. Exercises under hot water or dry heat to increase the circulation. The former is preferable.

PROGNOSIS: With the splinting of circulation as well as the fracture the average simple industrial fracture should be back in active production within six weeks. The badly comminuted may be disabled for as long as 4 months, and as much as 25% disability can be expected. No attempt is made in this paper the determination of disability.

Adequate intelligent reduction and early active motion and directed exercises will decrease the patient's convalescent period and help to drive away that easily acquired, but hard to cure disease, "Insuranceitis."

News Notes from Duke University School of Medicine, February, 1942

At the beginning of the winter quarter, there were 247 medical students, 74 first year, 62 second year and 111 juniors and seniors.

On November 11th, 1941, Dr. Michael Heidelberger, of the Department of Medicine of the College of Physicians and Surgeons, New York City, spoke to the Duke Medical Society on "Recent Advances in the Knowledge of Complement and its Function."

The following have addressed the staff and students:—On December 10th, 1941, Dr. J. M. McIntosh, Professor of Public Health, University of Glasgow, Scotland, on "The Medical Student in War Time"; on January 14th, 1942, Mrs. Mary P. Diaz, of Puerto Rico, on Occupational Therapy in Puerto Rico; on February 11th, 1942, Professor Ralph Linton, Professor of Anthropology at

Columbia University, New York City, on "Culture in the Normal Personality."

Dr. R. W. Graves, Assistant Professor of Neurology, has been appointed as one of the Army Consultants on Meningitis.

Dr. J. M. Ruffin, Associate Professor of Medicine, has been appointed as one of the Army Consultants on Tropical Medicine.

"In these days when we are all confronted with a question of shortages in various commodities and an increase in the price of those obtainable, we are happy to announce that not only will we continue to carry our policyholders at no increase in the cost of their accident and health insurance, but we adopted a resolution to the effect that there shall be no restriction under our policies by reason of Army, Navy, or Marine Service and this is irrespective of where such Service may take the policyholder."

—The Physicians Casualty Association.

Surgical Treatment of Varicose Veins

C. J. SCURRY, M.D., F.A.C.S.
GREENWOOD, S. C.

For the successful surgical treatment of varicose veins of the lower extremities, a working knowledge of the blood supply in this region is essential.

The return blood supply in the lower extremities consists of two main systems; the deep veins, consisting of the femoral, popliteal, anterior and posterior tibial veins; the superficial system, made up by the great and lesser saphenous veins. There are also several communicating branches between these two systems which allow part of the blood from the saphenous system, under normal circumstances, to empty into the deeper veins. At or near the sapheno-femoral junction three important tributaries empty, namely, the (1) external pudendal, (2) superficial epigastric, and (3) the superficial circumflex. These tributaries are very important.

It is also necessary to understand the pathology which accompanies varicosity in this region. There are several valves in the saphenous system, particularly a very large valve at the sapheno-femoral junction, and there are also valves between the superficial and deep circulation. When there is dilatation or incompetency of the valve at the sapheno-femoral junction, great pressure is exerted in the long saphenous, which becomes dilated, this causing stagnation and reverse circulation.

Causes of varicose veins will not be discussed more than to say that they are frequently due to a chronic cough, pregnancy, or some pressure in the pelvis. Varicose veins are frequently found in individuals who have standing occupations, but are not often encountered in people who have walking occupations.

The injection of sclerosing solutions as a cure for varicose veins serves a useful purpose in about 25% of the cases. It has been shown by statistics of many investigators that there is about 60% recurrence after the injection treatments. There is one type of varicose vein, however, which will respond to injection treatment in a very high percentage of cases, and this will be considered later.

In a large majority of cases, there is an incompetent saphenofemoral valve which is responsible for the varicosity and unless the back-flow from the femoral vein into the saphenous system is intercepted, the percentage of cures will be very small. At present, the accepted treatment for this condition includes ligation and division of the saphenous vein and its tributaries at the sapheno-femoral junction, combined with injection of suitable sclerosing solution.

There are cases which have an associated back flow from the deep venous system into the saphenous system and these require additional ligation at the site of the reflux. This condition is due to the incompetent valves of the communicating veins.

Before considering an operative procedure for varicose veins, it is essential that we determine the pathologic condition present. First, we must know whether the deep circulation is patent. Second, we must determine whether cure may be expected from simple injection or whether we should rely upon ligation and injection.

Contraindications: There are only two absolute contraindications for ligation of the saphenous vein, namely: occlusion of the deep venous circulation or active phlebitis in the deep or superficial veins.

It is inadvisable to ligate varicose veins during pregnancy. A history of phlebitis per se does not necessarily present a contraindication, but the deep circulation should be most carefully tested before operation is attempted.

Poor arterial circulation is considered a contraindication. However, Pratt of New York, cites several cases in which arterial circulation improved following relief of the edema, etc., associated with varicose veins.

The Trendelenburg test is a valuable aid in dealing with varicosities and is performed as follows: The patient is placed in recumbent position with the leg elevated. A tourniquet is applied to the upper third of the thigh and the patient is allowed to stand. If the veins

remain empty or slowly become dilated, the test is considered negative. If the veins fill suddenly with tourniquet still on, it is designated a double positive test. If the veins fill up suddenly from a back-flow of blood when the tourniquet around the thigh is released, the test is positive.

A negative Trendelenburg test signifies that only the superficial veins are incompetent, that there is no valvular insufficiency of the intercommunicating veins, or of the saphenous valves, and that ligation and division of the saphenous vein is not necessary for injection will effect a satisfactory cure.

A double positive Trendelenburg test indicates an incompetency of the intercommunicating valves and suggests that injection or ligation of the saphenous vein will probably be of little benefit. Sarma reports a failure of 24 out of 37 cases in this group.

A positive Trendelenburg test, which indicates incompetency of the sapheno-femoral valve, calls for a ligation of the saphenous vein with its tributaries and injection. When properly performed, this should produce a very high percentage of cure. Sarma reports 958 good results out of 1000 cases in this group. Pratt, of New York, reports likewise a high percentage of satisfactory results.

Perthe test: Perthe describes a test to determine the relative patency of the deep veins of the legs and it is comparatively simple to perform. A tourniquet is applied around the mid-thigh while the patient is standing. The patient is instructed to walk for five minutes with the tourniquet on. If the deep circulation is patent, the veins below the tourniquet are empty. Should the deep veins be occluded, there is increased pain on walking, and increased tension in the varicosities.

A general examination of the patient should be made, including vaginal and rectal examination in order to eliminate any mechanical obstruction in the pelvis.

Samuel's test usually suffices to rule out Berger's disease and is performed in the following manner: the patient is put in a reclining position with his leg elevated to 90 degrees. He then flexes his foot at the ankle joint several times. If the plantar surface of the foot becomes blanched and there is pain,

there is arterial disease of the extremities. In doubtful cases, the histamine test should be tried, which consists of spreading a drop of one to one-thousand histamine phosphate on the skin and puncturing this several times with a small needle. A red zone appears at the site of puncture in a very few minutes and indicates adequate arterial supply. The pulsation of the dorsalis pedis and posterior tibial arteries is absent in arterio sclerosis.

Surgical Treatment: The operation is that of ligating and dividing the saphenous vein and its tributaries at the sapheno-femoral junction. This junction may be located easily by either of the common methods in use. Pratt, of New York Post-Graduate Hospital, uses a point one inch lateral to and one inch below the spine of the pubis. Ochsner designates the point as one finger's breadth medial to the pulsation of the femoral artery just below the crease in the groin. The operation is performed under local anesthesia, following strict preoperative surgical preparation. Incision may be either transverse or longitudinal. The incision is usually not more than 2 1-2 inches long. The saphenous vein should be found between the superficial and deep fascia by blunt dissection. The vein is carefully stripped of fat for a distance of two inches near the junction of the saphenous with the femoral vein. There are found three tributaries, namely, the external pudendal, the superficial epigastric, and the superficial circumflex. These veins should be ligated and divided separately. Stalker and Heyerdale, of the Mayo Clinic, have shown that in the majority of cases, failure to ligate these tributaries is responsible for a great percentage of recurrences. A short distance below the saphenofemoral junction will be found the lateral and medial cutaneous femoral veins. These are frequently sites of varicosities and if encountered, should be ligated and injected also.

After the saphenous vein is ligated and divided, one of the sclerosing solutions (preferably 5 cc. of sodium morrhuate) is injected either through a ureteral catheter inserted several inches down the vein, or through a hypodermic syringe and needle. Extreme care must be taken not to spill any of the solution into the incision, since this may cause delayed

union. The incision is closed with interrupted sutures or 00 cat gut in the fascia, and some suitable interrupted skin suture. The incision is dressed with a snug bandage and an ace bandage applied from the foot up the entire leg. In cases where there are incompetent intercommunicating valves, the exact site of which can be determined by the Ochsner-Mahorner test or Pratt's test, it becomes neces-

sary to ligate and divide these veins at the site of reflux in order to secure good results. The patient is allowed to walk immediately, and should walk for a few minutes every two hours, as this is thought to prevent thrombosis occurring in the proximal portion of the ligated vein. Two weeks following operation, any varicosities which have not been occluded should be injected.

Diethylstilbestrol Suppository Medication in Dysmenorrhea

ROBERT B. GREENBLATT, M.D.
AUGUSTA, GA.

With the popularization of gynecologic-endocrine concepts it might appear that an orderly approach to determine the *raison d'être* for the dysmenorrhea in the individual patient is a most formidable task—but it need not be so.

The average physician, when confronted by a patient with severe dysmenorrhea, approaches the problem with trepidation, despair, confusion and hesitation. Experience has taught him that a dilatation and curettage will cure but a small number, and he hesitates to perform more radical surgical procedures. Endocrinotherapy confuses him, since he does not know whether to give estrogens, progesterones, androgens or gonadotropins. If one or the other is selected, the question arises

as to dosage, time of cycle, and route of administration. If this therapy proves unsuccessful, in despair he once more relies on opiates, codeine and aspirin, belladonna or some old favored remedy.

The conscientious gynecologist approaches the problem with smug complacency. He demands an answer to certain pertinent questions:

(1) What is the interpretation of the endometrial pattern from which bleeding takes place?

(2) Is the uterus hypoplastic or bulky, normal or studded with fibromyomata?

(3) Is the uterus in normal position and freely movable; markedly anteverted or retroverted?

(4) Is the cervix infantile, or is the os stenotic? Are there any congenital abnormalities such as uterus didelphus, etc.?

(5) Is the dysmenorrhea primary or acquired?

(6) What is the body build and the psychological background of the patient? Has she stigmata of hyperfeminism, virilism, hypogonadism? Is she neurotic?

(7) Is the pain distribution uterine, ovarian or ureteral?

(8) Is there any evidence of endometriosis, i. e. enlarged ovaries, retroverted adherent uterus, thickening of the cul de sac?

(9) Is there any evidence of pelvic inflam-

From the Department of Experimental Medicine, University of Georgia School of Medicine.

Read before the 5th District Medical Society, Rock Hill, S. C., Oct. 29, 1941.

The study of the effect of diethylstilbestrol suppository medication in dysmenorrhea was supported by grants in aid of research from John Wyeth and Bro., Inc. and from Sharp & Dohme, Inc. Grateful acknowledgment is also made to them for the supplies of diethylstilbestrol suppositories, and also to Ciba Pharmaceutical Co., Inc. for the estradiol suppositories (Ovoclyn), and to E. R. Squibb and Sons, Inc. for the ketohydroxyestrin suppositories and capsules (Amniotin).

The testosterone propionate (Perandren) and the pellets of testosterone propionate were furnished by Ciba Pharmaceutical Products, Inc. The progesterone (Proluton) and the anhydro-hydroxyprogesterone (Pranone) by Schering Corporation, the diethylstilbestrol dipropionate by Winthrop Chemical Co., and the Riona capsules by Sharp and Dohme, Inc.

matory disease or any other organic disturbance?

(10) What is the basal metabolic rate? What are the results of a glucose tolerance test, and perchance what are the blood and urinary estrogen levels, and pregnandiol glucuronide determinations?

Such thoroughness is to be commended, and to do less the gynecologist might feel guilty of being unscientific, or he might perhaps be accused by his fellow practitioners as negligent and unworthy of the rank of specialist.

So thorough a study proves not only of vast academic interest but fortunately for the patient the reason for the dysmenorrhea is frequently discovered and with the institution of proper therapeutic procedures many are benefited. Unfortunately, however, in spite of so thorough a study, the cause for the dysmenorrhea often cannot be determined, for by far the majority of patients with dysmenorrhea are apparently normal females. What is rational therapy in this so-called "normal" group of patients? After a variety of therapeutic procedures are tried in this group the experienced gynecologist may find himself in the same dilemma as did the practitioner. The author offers a standardized method of treatment which by virtue of its comparative economy, convenience, ease of administration, and its ability to alleviate more than 60% of the cycles in patients with the most painful menses, in itself answers two pertinent questions:

(1) That the answers to all the 10 sets of queries previously outlined are essential for a thorough understanding of the underlying principles of pathology and physiology of dysmenorrhea, but frequently fail to provide an intelligent basis for therapy since the greater number of patients are essentially normal.

(2) Since a standard method is applicable to the therapy of many types of dysmenorrhea, it permits the general practitioner to handle capably all but the difficult therapy-resistant cases.

Theories and Therapeutic Procedures

There are serious objections to accepting any of the theories (deficiency of estrogen, excess of estrogen, deficiency of progestin, or

overactivity of progestin) which seek to explain the cause of primary dysmenorrhea. Kotz and Parker¹ have shown that in 60% of a group of 50 cases with dysmenorrhea, the endometrial patterns gave evidence of corpus luteum deficiencies. On the other hand, according to Wilson and Kurzrok², dysmenorrhea never occurs without an active corpus luteum. Fluhmann, in extensive studies of estrogen assays, failed to find any consistent departure from the normal in the amount of estrogen or the type of titres obtained. Concerning uterine contractility, it has recently gained currency that estrogens initiate uterine contractions (and sensitize the myometrium to pituitrin), whereas progestin diminishes uterine contractility and sensitization. Thus, one is led to believe that when estrogens are excessive or progesterone insufficient, exaggerated contractions result which the patient experiences as pain. This, however, has not been substantiated and in our work we have only too often been able to alleviate the dysmenorrhea by the administration of estrogens where progestin therapy had failed.

The concept of androgen deficiency, in an effort to account for the success of testosterone therapy fails to hold because not infrequently patients who were alleviated by testosterone therapy could also be alleviated by estrogen therapy.

That dysmenorrhea cannot be due to a progestin lack per se can be adduced from the fact that almost every one of our patients with but few exceptions revealed excellent progestinal endometrium. Endometrial biopsies were obtained soon after onset of menses by suction curettage. Furthermore, when estrogen therapy or testosterone therapy were given in massive doses, ovulation failed to occur as was evidenced by a persistent estrogenic endometrium. Yet in spite of the lack of progestinal response no pain was experienced. The fact that proper use of estrogen in physiologic doses will not prevent the occurrence of a progestinal endometrium in the greater number of cases and yet will be followed frequently by a painless period tends to point out that dysmenorrhea is due to a hormonal imbalance in estrogen-progestin relationship rather than a progesterone deficiency. It is only the very

occasional case in which a mixed or progestinal deficient type of endometrium is obtained that progesterone therapy is useful and indicated. Such cases in our experience are rare and usually have irregular cycles or other menstrual disturbances such as oligomenorrhea or menorrhagia. (Chart 1). Oral progestin (anhydro-hydroxy-progesterone) may be expected to alleviate dysmenorrhea in a goodly number of patients³. Oral progestin is probably utilized by the body differently from parenteral progesterone and may account for the good results in certain patients in whom parenteral progestin proved futile (Chart 2).

Testosterone therapy is frequently followed by gratifying results—however, the risk of masculinization, the expense of therapy, and fear on the part of the patient that somehow it is not right—mitigate against its general acceptance. Then again therapeutic failures are frequent unless massive doses are used. Pellet implantation of testosterone propionate holds much promise in the treatment of dysmenorrhea⁴; however, this is still in the experimental stage (Chart 3). Gonadotropins, whether chorionic, equine or extracts of the anterior pituitary are used, often are followed by striking results. The incidence of improvement following the use of gonadotropins varies greatly with different authors.

A simple method that is generally applicable in many types of dysmenorrhea regardless of position and size of uterus and by which pain will be alleviated in over 60% of the cycles is here outlined: The patient is requested to insert into the vagina a suppository of 0.2 mg. or 0.5 mg. of diethylstilbestrol for 14 to 20 nights following the cessation of menses. This therapeutic procedure will be followed by satisfactory alleviation of pain, provided there are no congenital abnormalities, in over 80% of the patients in whom it is tried for the first time. Sufficient alleviation (relief of 80% or better) may be expected in over 60% of the cycles. Unfortunately it has to be repeated each month and in many instances it will be found that satisfactory relief from pain is obtained only every other menses.

Diethylstilbestrol has certain advantages over the naturally occurring estrogens, such as low cost, and the high estrogenic activity of

suppository medication since diethylstilbestrol is more readily absorbed per vaginam than true estrogens. However, the disadvantages of diethylstilbestrol are its so-called toxic manifestations. Side reactions such as mild nausea and vaginal soreness are encountered in 26% of the cases⁵. To obviate these side effects estradiol suppositories 0.4 mg. to 0.8 mg. may be used with comparable results in those patients who can afford such therapy. Over 70 patients with dysmenorrhea received from one to eleven courses of suppository medication. An analysis of the accumulated data will be presented in another paper. However, the scrutinization of the following typical case history will suffice to show that this form of therapy administered per vaginam is not only economic and convenient but so standardized as to make for a reliable mode of administration unequaled by the parenteral, oral, percutaneous routes of estrogen medication and is superior to the use of progesterones, androgens or gonadotropins.

Case Report

A white female of 22 years of age complained of excruciating pain with the onset of each menses which incapacitated her for several days. Nausea and vomiting as well as headaches regularly accompanied the onset of pain. The patient appeared to be a normally developed young woman and had normal interests. She weighed 131 lbs. and was 5 ft. 7 in. in height. Menstrual history: onset at 13, irregular cycle varying from 5—7 weeks, flow lasting 5—6 days. Premenstrual tension and pelvic pain were present for one week before the onset of period. With the onset of the menses, the pain became so severe as to double her up. She became nauseous and vomited frequently and headaches were severe. Medication availed her naught. Dysmenorrhea had been present ever since the onset of catamenia and it appeared to her as if it were becoming progressively worse. The patient was hospitalized for study. Routine studies and general examination were essentially normal. Pelvic exam revealed a retroverted fully developed uterus. Adnexae appeared normal by bimanual palpation. A Hodge pessary was inserted, and was retained for several months but without

benefit to the patient. Parenteral injection of diethylstilbestrol, progesterone, testosterone propionate were of little avail although the patient did note that pain was lessened by about 25% with testosterone propionate therapy, and that the nausea and vomiting were alleviated. When 0.5 mg. diethylstilbestrol suppositories were inserted nightly for 20 nights during the intermenstruum, the patient experienced complete relief from pain for the first time in her menstrual career. The flow was normal, there was no nausea and vomiting and no breast pain, but there was no change in the headaches. Chart 4 follows the therapy administered and the results obtained during the months that followed. It was soon apparent however, that pain was to be expected with every other menses. An attempt is being made to find a suitable alternate mode of therapy to be used every second month. In January suction curettage was performed about 10 hours after the onset of a painless menstrual period. Following this procedure she experienced some pain for several hours which was quite tolerable. Estradiol suppositories were used before the period in March with results equal to diethylstilbestrol suppositories. An analysis of the 11 cycles in which suppository medication was used yields the following results—in 6 cycles the results were entirely satisfactory, in one there was 80% relief, in another 50% relief and in three the pain was as severe as ever and in these three there was a recurrence of the nausea and vomiting. It might be said then, that in 7.5 of the 11 cycles there was alleviation of pain. It is quite evident that success followed suppository medication where parenteral diethylstilbestrol, progesterone and testosterone propionate therapy had failed.

Discussion

The impression must not be gained that the approach to essential dysmenorrhea is solely through the proper use of estrogens, progestins, androgens or gonadotropins. Many patients who have normal or subnormal basal metabolic rates are frequently aided by simple thyroid therapy. Benzedrine sulfate and the newer antispasmodics may be useful. It is surprising to find how many patients who obtained moderate to complete relief from hormone

preparations also obtain relief from one or two capsules containing: propadrine hydrochloride 3-4 gr., acetophenetidin 2 gr., and acetylsalicylic acid 3 gr. ('Riona' Capsules, Sharp and Dohme). These capsules are worth while trying alone or in conjunction with hormonal therapy. Some patients, however, complain of heart flutter or marked weakness soon after this medication. If this reaction is experienced this form of therapy should be discontinued.

In the mild forms of dysmenorrhea there are a variety of procedures that may be used with equally good results. In apparently normal females with severe dysmenorrhea in whom antispasmodics, sedatives, thyroid, usual hormone therapy fail to bring about desirable results, I recommend for your consideration and trial the use of diethylstilbestrol suppository medication. Although satisfactory relief from pain may only be experienced every other menses, nevertheless such results are a welcome relief to these weary patients. In the experience of the author, diethylstilbestrol suppository medication has proved as efficient in the alleviation of dysmenorrhea as any other hormonal preparation and so frequently succeeded where other methods failed. It is comparable to the results obtained by Sturgis and Albright⁶ who were able to relieve dysmenorrhea by inhibiting ovulation by repeated injections of large doses of estradiol benzoate. It is convenient and requires only one visit per month for further check-up and observation by the physician. It is economical and within the reach of every patient.

Conclusions

A new method of treating severe dysmenorrhea is recommended. It was found that suppositories of high estrogenic activity will satisfactorily relieve over 60% of the cycles in which they are used. Either estradiol (0.4 mg.—0.8 mg.) or diethylstilbestrol 0.2 mg. — 0.5 mg.) suppositories may be used nightly for 14 to 18 days during the intermenstruum. Diethylstilbestrol suppository medication is an economic, convenient mode of therapy and proved effective in many cases where parenteral estrogen, progesterone, testosterone and gonadotropin administration had failed. Frequently, however, only alternate menses are

benefitted. In certain cases beneficial results follow only when therapy was accompanied by inhibition of ovulation. In other cases, although ovulation was not inhibited, beneficial results nevertheless occurred. It is thought that in these cases the activity of the corpus luteum was sufficiently modified to alleviate the dysmenorrhea. Estrogen therapy, particularly in suppository form, has a definite place in the armamentarium for the treatment of dysmenorrhea.

LEGENDS

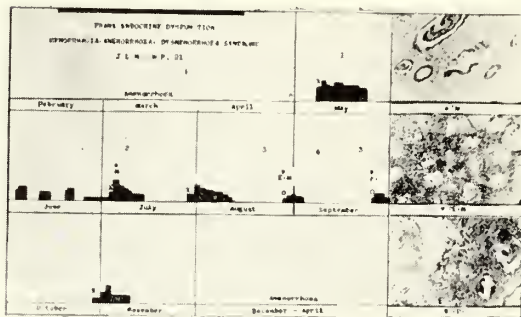


Chart 1. J. L. M., W. F., 21, menorrhagia-amenorrhea-dysmenorrhea syndrome

1. Ergot
2. Thyroid
3. Progesterone-parenteral
20 mg. in 4 days
4. Estrogen (1 mg. stilbestrol)

Studies of Curettings

- ▲ = D & C
- ▼ = Suction Curettage
- M = Unripened endometrium
- E-M = Atrophic stroma—unripened glands
- P = Imperfect progestinal
- X = Pain
- O = No pain

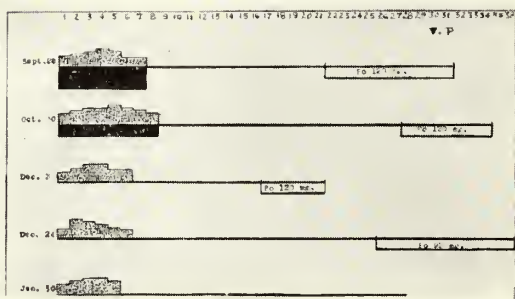


Chart 2. J. C. W., W. F., 32. Primary dysmenorrhea, severe. 11-q35-7. Uterus normal size and position. P = Oral progestin (anhydro-hydroxy-progesterone). ▼ = Suction Curettage. P = Progestinal endometrium. Pain solid squares. Menses stippled squares.

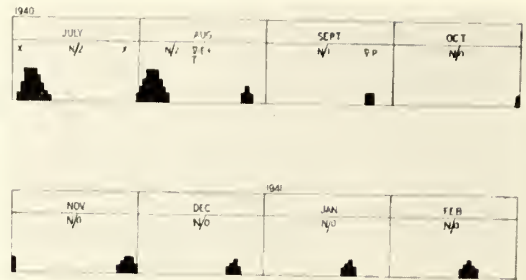


Chart 3. I. H., C. F., 33. Menorrhagia, Dysmenorrhea

T = Implantation of 48 mgm. Testosterone Propionate

▼ = Suction Curettage

E+ = Hyperplastic endometrium

P = Progestinal endometrium

X = Pain

N/ = Nocturia, times per night

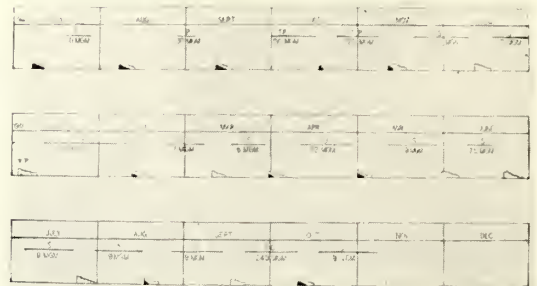


Chart 4. E. Y., W. F., 22. Severe primary dysmenorrhea

S₁ = Diethylstilbestrol dipropionate

P = Progesterone

T. P. = Testosterone propionate

S = Diethylstilbestrol suppositories

▼ = P = Progestinal endometrium (suction curettage)

O = Estradiol suppositories

P. O. = Anhydro-hydroxy-progesterone (oral progestin)

A = Ketohydroxyestrin Caps. (suppos.)

■ = Pain

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THE JOURNAL

OF THE

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MARCH, 1942

The Medical Profession,
 State of South Carolina.

On December 10, 1941, the Governor of South Carolina, at the request of the South Carolina Medical Association, appointed the writer as Chief Medical Officer, Medical Division, South Carolina Council for National Defense. Following that appointment, a meeting was held in Columbia, on December 11th, for the purpose of organizing for Civilian Medical Defense throughout the State. At that meeting, which was attended by the President, President-Elect, and all Councilors of the South Carolina Medical Association, it was decided that the Central Staff should include, besides the Chief Medical Officer, three assistants, and an advisory committee consisting of seven members to be selected from the following organizations: the Medical, Dental, Hospital, Public Health, Nurses, and Pharmaceutical Associations, and the Red Cross; that each Councilor of the South Carolina Medical Association would act as a District Medical Officer, and would select one man from each county in his district to serve under him as Local Emergency Medical Chief. As soon as the Local Chiefs were appointed, information in the hands of the Chief Medical Officer pertaining to the work, was mailed to the Local Chiefs with the request that organizations be set-up in numbers sufficient to care for the population groups. On December 30th a State-wide meeting was held in Columbia. Each County was represented and the program was thoroughly discussed. Additional information has been forwarded to the Local Chiefs. As much time as was available has been given by the Chief Medical Officer and his Assistants to the organizations throughout the State.

Information coming to the Central Office indicates that organizations have been set up, at least on paper, and that considerable work has been done throughout the State. It is felt, however, that perhaps the work is not being vigorously pushed and that not enough active interest has been aroused.

No one doubts the ability of the American people to do a complete job, once the people are sufficiently aroused to the necessity of so doing. However, our democratic procedure is slow in hitting its full stride. Many of our leaders, which includes members of the Medical Profession, do not seem to realize that America is in a war to the death. Not only is it necessary to organize our people, but we must perfect all organizations and put plans into active operation. Neither the authorities of the United States Armed forces, nor our Legislative bodies can tell when or where this country may be attacked, and it behooves the people of this State, to be fully and adequately prepared to meet any and every emergency.

This letter is being written for the purpose of urging the Medical Profession of South Carolina to take a leading part in the organization and preparation for the emergencies which

face us. Complacency has no part in the life of people of this country and the sooner we appreciate the magnitude of the task ahead of us, the sooner we will be willing to go all out to meet the challenge. It must be kept in mind by all citizens of the State of South Carolina, that the problem of emergency medical preparation is of a local character and it cannot be left to any governmental agency, state, or federal.

As to funds for the purchase of equipment and supplies, none are available except insofar as they are made available locally. Those communities which are holding back with their preparations awaiting appropriations and allocations of funds from other sources may find themselves in distress, if a disaster should arise.

The Chief Medical Officer and his Assistants are ready to render any aid possible, but in the final analysis the whole program must, of necessity, be left to the initiative of the local emergency chiefs and their assistants in cooperation with the local Civilian Defense Council in each County.

Emergency Medical Defense work offers to the physicians of South Carolina the finest opportunity available to them in many years. The time is ripe for them to assume their rightful places as leaders in their communities. The work will be hard and exacting, hours of labor long and arduous, compensation in money small, but if this problem is handled by the physicians of the State in a manner in which they are capable of handling it, the benefits to the profession as a whole, will last through generations to come. You are admonished to remember Pearl Harbor, to take hold of problems in your immediate community, and to do the job that you are capable of doing; a job that no other group is qualified and equipped to do.

Very truly yours,

H. Grady Callison, M.D.,
Chief Medical Officer,
Medical Division,
S. C. Council for National Defense.

ANNUAL MEETING

Word has just been received that Myrtle Beach will not be available for holding the annual meeting in May. Plans are being made by the Council for another location and this will be announced as soon as possible.

The meeting will be held May 19, 20, and 21. Brigadier-General Lewis B. Hershey, Director of Selective Service, will be the guest speaker at the banquet on Wednesday evening, May 20th. Lieutenant-Colonel David N. W. Grant, Chief Medical Officer of the Air Corps, will speak Wednesday afternoon. Other outstanding speakers are being secured and announcements concerning them will be made shortly.

Members of the Association desirous of presenting papers should submit title and abstract at once to Dr. N. B. Heyward, Columbia, S. C., Chairman of the Scientific Committee.

DUES

Membership dues are payable as of January 1, 1942, and should be paid immediately.

At a recent meeting of the Council it was decided to enforce two provisions of the Constitution which have not been enforced during recent years.

1. No member of the Association will be entitled to register for the annual meeting who has not paid his dues for the year.

2. No delegates to the House of Delegates will be seated unless the county society which they represent has paid its annual assessment (i. e. dues for its members) at least thirty days prior to the meeting of the House of Delegates.

Will all county society secretaries please take note and send in their dues immediately.

COUNTY SOCIETY OFFICERS

Most of the county society secretaries have sent in the names of the officers elected for 1942. A few counties are still to be heard from, however, and these secretaries are asked to send in the names immediately so that a complete list of all county society officers may be published in the next issue of the Journal.

NEWS ITEMS

DEATHS

Dr. Paul A. Phillips died at his home in Springfield on January 25th.

Born in 1869, Dr. Phillips graduated from Bellevue Hospital Medical College in New York in 1891. He then settled in Springfield where he practiced until his death. At the time of his passing Dr. Phillips was the beloved physician of Springfield and its surrounding territory and friends from near and far gathered to pay him tribute at his funeral.

Dr. R. A. Bratton, York County's oldest physician, died at his home in York on January 26th at the age of 82.

Born in York, Dr. Bratton received his education at the South Carolina Medical College and this was followed by post-graduate work in Louisville and New York. In addition to a large practice Dr. Bratton devoted his time to community affairs. For a number of years he was a member of the Board of Trustees of the York City Schools.

Dr. Bratton was a past president of the York County Medical Society and also served as a member of the State Board of Medical Examiners for a number of years. He is survived by three children.

Dr. Herbert Jerome Matthews died at the Toumey Hospital in Sumter on February 17th, after an illness of a few days.

Dr. Matthews had practiced medicine in and around Elliott for many years and his passing will leave a real gap in the community since he was not only loved but he was the only physician in that district. He is survived by his widow and two children.

Dr. Robert Berry of Union died from a heart attack on January 23rd.

Dr. Berry was born in 1877 and was graduated from the Medico-Chirurgical College of Philadelphia in 1901.

In addition to his practice Dr. Berry devoted much of his time and effort to civic affairs.

Dr. J. B. Johnston, beloved physician of St. George, died Christmas morning at his home.

"Dr. John" as he was affectionately known to all of his friends, was born in Texas in 1878. He was graduated from the South Carolina Medical College in 1900. Following his education he located in St. George where he practiced medicine until his death.

In addition to his medical skill Dr. Johnston was famous for his hospitality and for his interest in the religious and educational life of his community.

Dr. Johnston was at one time vice president of the South Carolina Medical Association and also served as president of the Coastal Medical Association and also of the Dorchester County Medical Society.

Dr. Johnston is survived by his wife and six children, one of whom is Dr. A. R. Johnston of St. George.

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PRACTITIONER'S PAGE

This page is devoted to the everyday problems of the physician in practice. Members of the Association are urged to suggest subjects for articles which they desire discussed. Members are also urged to submit questions. Each question will be referred to some physician who is qualified to make answer, and if the question involves a subject of general interest, the answer will be printed.

THIAMIN CHLORIDE (VITAMIN B₁)

Roe E. Remington, Ph.D., D.Sc.

Professor of Nutrition

Medical College of the State of South Carolina

It seems to be definitely established that the role of the vitamins of the B complex is to act as enzymes or co-enzymes to promote steps in the oxidation of carbohydrate in the body. In the absence or deficiency of vitamin B₁ (thiamin) there is an accumulation of pyruvic acid, an intermediate step in the metabolism of glucose, in the tissues. The neuritis produced in such cases appears to be due to intoxication by pyruvic acid, and in experimental animals at least, it vanishes with dramatic rapidity when thiamin is given.

Since all of these B vitamins are concerned in carbohydrate oxidation, the view expressed by Agnes Fay Morgan that there is a certain balance among them at which this oxidation proceeds smoothly, appears entirely rational. If this view is correct, then the upsetting of this balance by giving inordinately large doses of one of them without proportionally increasing the others, may be quite as apt to result in the accumulation of toxic products as the lack of any of them.

Furthermore, since the role of thiamin is to act as a co-enzyme in the oxidation of pyruvic acid, the daily requirement is obviously proportional to the amount of carbohydrate to be oxidized, which on ordinary mixed diets can be taken to be proportional to the Calorie intake. Roughly, around 0.7 milligram per 1000 Calories, or 2 milligrams per day for a man weighing 150 pounds at moderate work, is considered a fully adequate and liberal allowance. Until it can be shown that thiamin has some other and different function in the body, there is no reason or justification for the large doses sometimes given. Indeed, the product is too new for us to feel sure that untoward effects may not follow the long-time administration of unnecessarily large amounts.

Relative, or sub-clinical, deficiency in thiamin

is much more wide-spread than we had supposed, possibly 50 per cent of American families obtaining less than the optimal amount for a part or all of the time. The reason is our fondness for purified and refined foods: sugar, white flour, polished rice, grits, to the exclusion of whole grain cereals and bread; and the common practice of discarding the water in which vegetables are cooked, and in which a considerable portion of the vitamin is dissolved. Rice milled by modern methods loses 75 per cent of its thiamin. Patent flour contains not over 10 percent of the thiamin of the wheat. Altogether these refined foods and sugar account for between 40 and 50 per cent of the total calories of the average American diet. Bearing out this idea of a general and wide-spread deficiency, experiments at the Mayo Clinic have demonstrated that persons eating an average diet are able to do more work with less fatigue, and maintain better nervous poise, if added thiamin is given.

Among the detectable manifestations of deficiency are the nervous disturbances referred to, leading to spastic neuritis (beri beri); dilatation of the heart and slowing of the heart rate; sometimes edema of the tissues; always loss of appetite and sometimes even nausea. Restricting the daily intake to around 10 per cent of the optimal allowance has produced a condition resembling neurasthenia.

Tables showing the relative thiamin content of foods can be found in many books and vitamin charts that have been published. Generally we should not expect deficiency in one whose diet is well balanced as to meat and vegetables, provided enriched or whole wheat bread and flour are used. This enriched flour, being sold with the approval of nutritional and food control authorities, contains added calcium and iron, and added thiamin and niacin (the new name for nicotinic acid) up to the amount naturally present in the best cereal sources, and will contain riboflavin as soon as an adequate supply is available. It is

recommended as an automatic method of improving the mineral and vitamin content of diets generally, but since not all the vitamins of grain are available in synthetic form suit-

able for addition to flour, this enriched flour should not be considered as a perfect substitute for whole grain cereals and flour.

MEDICAL SUMMARIES

Under the heading **1942** the following challenging editorial appeared in the New England Journal of Medicine (December 25, 1941.)

"It would be a mere meaningless repetition of a time-worn phrase to wish our readers, at this junction, a happy and a prosperous New Year. There is no reason to believe that the year 1942 will be particularly happy in the usual gay meaning of the term, or especially prosperous, except as we may seize on the occasion to take arms against outrageous fortune and make our enterprises prosper.

"Rather, at the beginning of next year we should form resolutions: to strip for the action that is ahead, to strengthen our own moral fiber and that of those about us, to banish fears and doubts and to be resolute. There will be dark days in the months to come—days of discouragement, of depression, of sorrow—but let there be no days of despair. The sands of democracy are far from running out, and the eventual reward of courage will be victory.

"And may the faith of those peoples who have hitherto suffered be as great as that of Jeremiah, who, prophet of doom though he was, and imprisoned by the Chaldeans who were hammering at the gates of Jerusalem, gave proof of his belief in the ultimate rehabilitation of the nation by purchasing a plot of ground in the ancestral land of his family.

"Thus saith the Lord of hosts, the God of Israel; Take these evidences, this evidence of the purchase, both which is sealed, and this evidence which is open; and put them in an earthen vessel, that they may continue many days.

For thus saith the Lord of hosts, the God of Israel; Houses and fields and vineyards shall be possessed again in this land.'"

Jeremiah 32:14 and 15.

There is no more important no more thankless position than that of **secretary of a county medical society** and yet all must acknowledge that the man who holds this office is one of the most important cogs in organized medicine. The following editorial (Ohio State Medical Journal, January, 1942) is well worth reading and considering.

"This is an accolade for the man who performs one of the most important but thankless jobs in medical organization — the county society secretary.

"Year-end society elections throw a momentary spotlight on his position, but for the next 12 months he performs his duty in the relative obscurity of behind-the-scenes desk work. In some counties he is a veteran, re-elected year after year by his colleagues because they know he is willing to make personal sacrifices for the good of his profession. In other counties he is a newcomer, elevated to the post because the society members believe he can be relied on to carry out the organization's many paper-work details.

"For the president there is limelight, prestige, and the gratification which comes from being the key man in local medical affairs for a brief time. For councilors and committee chairmen there are questions of policy to be considered and acted upon. For the secretary there are bulletins from the State Association to be transmitted, there is correspondence with the State Association and The Journal to keep up, there are membership records to keep straight.

"In terms of telephone communications the secretary's job is like a switchboard. Through it passes the vital business which keeps the society alive. Through it the wires are kept clear and traffic is kept moving. It is not a job on which lip service is of much value. The

man who fills this job deserves the complete cooperation of all members of his society."

In a guest editorial in the Virginia Medical Monthly (Jan., 1942) Louis Hamman of Baltimore, discusses **lipid pneumonia** and states:

"As might be surmised the symptoms of lipid pneumonia are variable. In most cases the symptoms are mild and come on insidiously. Indeed, in many instances the disease is discovered unexpectedly in the course of a routine physical examination or in the roentgenogram. The evidence of extensive infiltrative disease of the lungs in the absence of pulmonary symptoms is a rather characteristic finding in lipid pneumonia. The clinical manifestations of the disease roughly may be grouped as follows: In most cases the patients have no symptoms and the condition is unsuspected until revealed at autopsy. In another large proportion of the cases the patients have no symptoms but routine physical examination or a roentgenogram reveals unexplained areas of consolidation in the lungs. A smaller number of cases have mild, vague symptoms, e. g., cough and a slight persisting fever, leading to an examination of the lungs which discloses one or more areas of consolidation usually of an extent not to have been anticipated from the mildness of the symptoms. There may be cases with recurring bouts of fever and evidence of areas of pulmonary consolidation resembling broncho-pneumonia. These symptoms are caused by recurring pulmonary infection. Or, there are cases with chronic cough, pain in the chest and often a little fever showing on examination massive consolidation of one or more lobes. The condition may simulate carcinoma as did the interesting case reported by Thomas and Rienhoff. The acute cases following the aspiration of a large amount of oil are easily recognized except perhaps in the unconscious or moribund patient. The clinical manifestations are those of aspiration pneumonia. Lipid pneumonia complicating another pulmonary disease may produce a puzzling clinical picture.

"It seems altogether likely that most cases of lipid pneumonia are overlooked and that the disease will prove to be not an uncommon one when physicians become skilled in detect-

ing it. Any unusual pulmonary lesion should arouse suspicion, particularly the demonstration of an unexpected lesion or of a lesion more extensive than the clinical symptoms had led one to anticipate, or a lesion of unusual form and distribution."

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Literature furnished on request

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Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 455

Present Illness: 37 year old colored woman had been having pain in her right lower quadrant for some time. It was recurrent and later involved the supra-pubic area. About four weeks prior to admission to hospital she visited a physician who told her she had an ovarian cyst. However she developed a cough and fever that was not severe, but the operation was postponed. About 8 days prior to admission fever became higher, the cough more severe and she noticed a substernal pain when she coughed. Went to bed and remained there. The cough productive of phlegm only, except on two occasions. On 9-29-41, she coughed up a little blood-tinged sputum and on 10-6-41 about "1 pint" of dark bloody sputum. Had eaten very little due to nausea and vomiting.

Past History: Had always considered herself healthy. No contact with tuberculosis; never subject to frequent respiratory infections. L. M. P. was in July, 1941.

Physical Examination: T. 99.6. P. 120. R. 24.

Showed a well-nourished and developed colored woman who appeared to be weak and chronically ill but not in severe distress. Head and neck—normal except for injected pharynx. Skin—warm and moist, no lesions. Glandular—no lymphadenopathy. Chest—normal. Lungs—there was impaired resonance below the 4th. I. C. S. on the right posteriorly. Fremitus and breath sounds were unchanged over this area, but there were numerous fine crackling rales. Lungs were otherwise normal. Cardio-vascular—normal. B. P. 140/100. Abdomen—rounded with thick panniculus. There was a small, firm, non-tender mass just above the pubis and to the right of the midline. Abdomen otherwise normal. Pelvis—The cervix was displaced posteriorly by a large tumor mass that was very firm and extended up against the symphysis.

Laboratory Examination: Urinalysis—all essentially negative.

Blood Counts	10-10-41	10-26-41	11-8-41	1-3-42
RBC	3.5	3.21	4.69	2.84
WBC	10,850	18,850	19,350	31,050
Hbg.	7	7.5	9	8
Polys	75	80	83	91
Lymph	20	16	16	9

Sputum — repeatedly negative for T. B., fuso-spirochetes 1 plus.

For typing—did not type out.

Culture—(1) non hem. strept. (2) strept. viridans (3) neg. for fungi. Guinea-pig inoculated with sputum—negative.

Blood Culture—positive staph. aureus (hemolytic)—taken on 1-3-42.

Hospital Course: Remained in hospital for about three months. For several weeks she ran a low-grade fever (maximum 102) and seemed to feel very well. She coughed occasionally and sometimes coughed up a small amount of bright red and dark blood. The fever gradually subsided and during this period she felt very well and her appetite was good. However, she would occasionally cough up a small amount of blood, sometimes as much as a cup full. The Mantoux test was negative. The physical signs in the lungs never varied to any degree. In the latter part of December, 1941 she became febrile. The fever gradually rose to a maximum of 104.6 where it remained for several days. She continued to feel well, though coughing up a small amount of blood. On January 7, 1942, she began coughing violently, expectorated much bright red blood and several clots. She became very weak, began gasping for breath and ceased breathing a little later.

Dr. Kelley (conducting): I believe that Mr. Waring has summarized all the data that we will need at present. Mr. Quisenberry, would you like to begin the discussion for us this afternoon?

Student Quisenberry: We seem to have two portions of the body involved here and it would appear that the involvement of one might be related to the involvement of the other. The mass in the pelvis which was described as small, firm and non-tender attracted my attention first. We have heard it stated that the patient was told she had an ovarian cyst, but we have nothing to bear this out. A cyst would have probably been fluctuant and should have been located more to one side or the other, rather than in the midline. If it was of ovarian origin, it would have been a malignant papillary cystadenocarcinoma. A malignant neoplasm of the uterus is also a possibility, but it seems that bleeding would have been probable either with an endometrial carcinoma or carcinoma of the cervix. Of course, fibromyomatosis may also undergo malignant change and bleeding would not necessarily occur if this was the case.

Next we have the pulmonary symptoms and such symptoms could have been produced by a malignant growth. Certainly a neoplasm could be responsible for the hemoptysis. I cannot definitely tie the two, but a malignancy in the pelvis might have metastasized to the lungs.

As regards tuberculosis, this too cannot be positively ruled out. The fact that we have a negative sputum does not eliminate it by any means.

Occasionally mitral stenosis produces hemoptysis

and this would also be consistent with basal rales, but we have no heart findings to support this.

The nausea and vomiting might even suggest carcinoma of the stomach, but it appears quite conclusive that the blood was coming from the lungs.

Frankly, I do not know what the patient had.

Dr. Kelley: Well, let us summarize and put together some of the things you have mentioned. You think she might have had a neoplasm of the lung, metastatic or otherwise. Are there any other possibilities?

Student Quisenberry: Pulmonary cystic disease is known to produce hemoptysis, particularly if there is secondary infection.

Bronchiectasis can also cause the coughing up of blood and it seems that this may be a good possibility in view of the chronic cough and fever of long duration. If this were true though she should have had a large amount of early morning sputum, which does not seem to have been the case. X-ray examination would help us rule it in or out.

Dr. Kelley (presenting X-ray films): All right, come up here and have a look at these films.

Student Quisenberry: There is an increase in density of the hilar markings on the right with some irregular increase in density in the mid-portion of the lung. I cannot make a diagnosis of neoplasm from these films, they suggest tuberculosis to me rather than tumor although with the other evidence it does not seem probably. I have the impression that pulmonary malignancies show up as quite definite localized densities.

Dr. Kelley: You have not suggested lipiodol installation as an aid in the differential diagnosis, but doubt if it would do much good. So you are inclined to eliminate a neoplasm of the lung?

Student Quisenberry: Yes sir, it does not seem likely.

Dr. Kelley: All right Mr. Quisenberry. Mr. Townsend what do you think of this case?

Student Townsend: I think she probably had a malignancy of the lung, although it would be unusual to have a primary tumor of the lung in anyone so young. In addition, I believe she had infection, possibly from tumor degeneration and necrosis with abscess formation. Secondary carcinoma of course may have come from the pelvis or some other focus of which we have no history. It might be interesting to know whether or not this woman had been pregnant.

Dr. Kelley: What difference would that make?

Student Townsend: A carcinoma of the cervix would be more likely with an old cervical laceration or she might have had a recent abortion with the growth of a chorioepithelioma.

Dr. Kelley: We do not have any history of pregnancy either recently or in the past. A carcinoma of the cervix cannot be entirely eliminated even if the woman had never been pregnant and certainly could not be ruled in even if she had been. What do you think is the most likely possibility?

Student Townsend: I think she had an abscess of the lung. Whether or not it was primary or secondary to some neoplastic process, I do not know. The fact that she ran a low-grade fever and a high leucocyte count help bear this out.

Dr. Kelley: Come up and study the X-ray films.

Student Townsend: (viewing X-ray films): I cannot see any evidence of abscess here. Nevertheless, I feel sure that there is one present. The density in the lung is in the lower right lobe apparently, and although not always true, that is the most frequent place for abscess formation.

Dr. Kelley: That might be suggestive.

Student Townsend: There is no mention of foul breath or sputum, nor even a statement as to whether or not there was pus in the sputum. The lack of these all are against lung abscess, yet I still think she may have had one.

Dr. Kelley: You cannot tell whether there is just an abscess present or whether there is some underlying predisposing lesion, can you?

Student Townsend: No, sir.

Dr. Kelley: Since the X-ray does not help us much, can you suggest any other examination that might be of aid?

Student Townsend: A bronchoscopy might help.

Dr. Kelley: A bronchoscopy was performed and showed pus coming from the right lower lobe bronchi. Does that help?

Student Townsend: I believe that this tends to rule out a primary bronchogenic carcinoma and lends some support to the possibility that she had a lung abscess.

Dr. Kelley: How long do you think it would take a patient to develop a lung abscess?

Student Townsend: I do not believe one could develop in less than three week's time. It seems that she would have developed a cavity in three months if there was infection present, but there is no demonstrable cavity in this X-ray picture. You can't blame that on the radiologist, however, perhaps there was a lot of fibrous infiltration about it and the purulent material in its center had not been completely evacuated.

Dr. Kelley: Does anyone have any other comments to make?

Student Wilson: If this were a carcinoma of the lung secondary to a neoplastic condition in the pelvis, would it not be unusual to find only one metastatic focus showing up in the lungs after the elapse of five months? The location of the lesion close to the hilus is also not typical of a metastatic lesion.

Dr. Kelley: That was the thought that stuck most persons who saw this case.

Dr. Pratt-Thomas: (Presenting gross specimen)—This case was brought up for discussion today because of the rather bizarre clinical manifestations that a quite common pathological process happens to exhibit in this instance and also because there are histopathological features of some interest.

This woman had a lung abscess. Here in the right lower lobe you see an irregular honeycombed abscess cavity, partially filled with necrotic debris and blood clot. There are two holes in the visceral pleura over the underlying abscesses and she escaped having a fullblown empyema only due to the fact that the two pleural layers were plastered together and thus prevented soiling of the right pleural cavity in general. You see that the abscess cavities contain much blood clot and here in the bronchi of both lungs are stringy clots forming casts of practically the entire bronchial tree. It was this latter fact that caused her death. A fairly massive hemorrhage blocked her respiratory passages and caused suffocation. We have gross and microscopic evidence of erosion of vessels within the abscesses. There is no evidence of malignancy and the mass in the pelvis was a uterus distorted by fibromyomata. She also had a bilateral chronic salpingoophoritis.

(Microprojection) Here you see fat stains of sections of the right lung including portions of the abscess cavity and the arresting features are numerous macrophages stuffed with red staining lipid material and large globs of similar material which are situated in the alveoli that remain, and also on closer examination, you will see numerous smaller particles of fat scattered throughout the fibrotic pulmonary tissue about the ramifications of the abscess. While this is only speculative it seems possible that a pre-existing lipoid pneumonia may have been the origin for the abscess that later developed. There are lipoid droplets free and in macrophages and giant cells in the left lung as well, but not in any great abundance.

In addition she also has pulmonary asbestosis, there being typical asbestos bodies lying in fibrous nodules in both lungs, but this is not an advanced process and only an incidental finding.



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SOCIETY REPORTS

Medical Society of South Carolina. At the meeting on January 27th, Dr. W. H. Prioleau presented a paper on Thyroidectomy for Intrathoracic Goiter with Particular Reference to the Maintenance of the Airway. Dr. Marcus E. Cox was elected to membership in the Society. The Society passed a resolution expressing disapproval of the bill with reference to optometrists which has been introduced into the Legislature.

On February 10th the Society has the unusual privilege of hearing Lieutenant-Commander R. L. Kennedy, Royal Naval Reserves, who spoke on the subject of "Shock" in connection with his own experiences during the present war. In addition to Dr. Kennedy, the Society had the pleasure of having as guests Dr. Robertson of the Royal Naval Reserves and other Medical Officers of the Navy and Army.

Anderson County Medical Society. At the February meeting Dr. Allen C. Bradham of Anderson presented a paper on Pre-operative and Post-operative Treatment of Prostatism. Dr. Mason Young of Anderson was elected to membership.

Oconee County Medical Society. At the February meeting Dr. J. Warren White of Greenville presented a discussion of Management and Care of Common Fractures, with moving pictures.

Spartanburg County Medical Society. At the January meeting Dr. George McCutchen, Columbia, spoke on the Management of Fresh Facial Injuries and Dr. Frank Coleman, Columbia, on Chest Injuries.

Kershaw County Medical Society. Dr. A. W. Humphries presented a paper on The Epidemiology of Typhus Fever at the February meeting.

Florence County Medical Society. At the February meeting Dr. L. B. Salters pre-

sented a paper on Influenza. Dr. E. M. Hicks discussed The Use of Sulphonamides in Respiratory Infections and Dr. O. T. Finklea discussed Urinary Antiseptics.

Columbia Medical Society. Dr. A. Bruce Gill, Professor of Orthopedic Surgery at the University of Pennsylvania Medical School, was the guest speaker and presented an excellent paper on The Etiology and the Treatment of Chronic Backache. With Particular Reference to the Effect of Postural Defects. Dr. George H. Bunch also spoke on Post-operative Tetanus. A large number of visiting physicians, particularly surgeons, were in attendance.

Tri-State Medical Association. With the local medical society as hosts Greenville entertained the Tri-State Medical Association. The meeting was well attended and the papers of a high quality.

With the usefulness of Sulfadiazine growing rapidly, it was felt that a booklet containing abstracts of significant recent articles would be of real convenience to physicians and others working with this important Sulfa drug. Accordingly, Lederle Laboratories, Inc., New York, N. Y. have recently made available a 64-page booklet, "Abstracts Selected from Published Articles on Sulfadiazine."

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BOOK REVIEWS

IMMUNIZATION TO TYPHOID FEVER

From the Research Laboratories of the Army Medical School, Washington, D. C.

The Johns Hopkins Press, Baltimore, Md.

"It is the purpose of this communication to report in detail a somewhat extensive series of experimental investigations participated in by members of the technical staff of the Medical Department Professional Service Schools, U. S. Army, during the period 1934-1940, with respect to certain antigenic and immunizing properties of selected strains of *E. typhosa*.

"These investigations were undertaken with the object in view, primarily, of determining whether it might be practicable to still further enhance the protective properties of the typhoid vaccine distributed to the Army, and secondarily, in the hope that it might be possible to make some contributions to existing knowledge of the processes of immunity.

"During recent years many contributions have been made to our knowledge of the mechanism of immunity, and the experimental investigations undertaken had as their special objective a determination as to whether or not the generally accepted hypotheses concerning some of the elements of the immune process might be applicable to the problem of immunity to typhoid fever."

—From Author's Introduction.

Cancer of the Face and Mouth; Diagnosis, Treatment and Surgical Repair

Vilray P. Blair, M.D., Sherwood Moore, M.D., and Louis T. Byars, M.D.

The C. V. Mosby Company, St. Louis, 1941

The work of Dr. Blair and his associates in plastic surgery, and in cancer of face and mouth, and skin in particular, has long been known throughout the world. Hence, it is very gratifying to have access now to the summary of their experiences with cancer of the face and mouth.

The volume consists of a resume of the observations made during the past twenty years on some 1500 cases of epithelial malignancy arising in or about the face and mouth.

The various chapters are all excellent. The illustrations are profuse, and splendid, and there is described hardly a single clinical picture that is not accompanied by an illustration. A portion of the book is also given over to operative technique, in which section diagrammatic sketches are used very effectively to show the procedure or procedures that

have been used successfully for the removal or destruction of carcinomata in various locations, and in particular the repair of residual defects.

The authors take a very sane view on the question of therapy, and abhor the fact that there is too great a tendency to regard surgery and radiation as rival therapeutic measures. The following quotations perhaps best express their opinion on this subject. "If all of a tumor is removed by excision, the patient will recover. If all of the tumor is irradiated throughout its extent by the correct amount of radiation, regardless of the kind of radiation, *some* (the italics are the authors') cancer patients will recover. The amount of ray which is necessary to this end is an unknown quantity except on very broad lines."—"As a matter of fact the proper management of cancer means the proper coordination of all three of these agencies." (Surgery, X-ray, and radium).

The work is recommended, without reservation, for the general practitioner especially for the portions dealing with diagnosis. It is the general practitioner who usually sees first these lesions, and, as in all other types of carcinoma, early diagnosis is imperative for the best ultimate results. It is also highly recommended for surgeons and radiologists, under whose care these patients fall, unfortunately often too late.

E. F. P.

CHINESE LESSONS TO WESTERN MEDICINE

By I. Snapper

Professor and Head of the Dept. of Medicine, Peiping Union Medical College, Peiping, China.

At the present time when our eyes are focused upon our ally, China, this book should prove of especial interest to physicians.

That there is such a thing as a geography of disease is a rather new idea in medicine but it is gradually becoming an accepted fact and this volume will prove a marked addition to the literature upon the subject. The same diseases may appear in different countries but these diseases will be influenced by local conditions and particularly by the diet of the people.

In Peiping, Dr. Snapper had ample opportunity to observe a wide variety of diseases amongst the various classes of Chinese, particularly among those who are very poor and who of necessity were living on a restricted and unbalanced diet. In masterly style the author describes these conditions as they are influenced by these outside factors.

In addition to the commoner maladies Dr. Snapper

discusses certain conditions not frequently met in this country but which are of interest to physicians. The book is well written and well illustrated and would be an addition to any physician's library.

NEUROANATOMY

By Fred A. Mettler, M. D.

Professor of Anatomy, University of Georgia
School of Medicine

The C. V. Mosby Company

There are certain books which are essential in the reference library of any medical student or practitioner of medicine. Such a book is one which deals with neuroanatomy and this volume by Dr. Mettler can be accepted for this position. Well written and copiously illustrated with excellent diagrams and drawings, this book should prove a valuable asset to a reference library.

RHEUMATIC FEVER IN NEW HAVEN

By John R. Paul, M.D.

Professor of Preventive Medicine, Yale University
School of Medicine

Published by The Science Press Printing Company
Lancaster, Pennsylvania

"This whole collection of studies," says the author, "is concerned with a case report, a case report on a large scale, in which the City of New Haven is the patient."

Over a period of twelve years many individuals in New Haven have engaged in studies concerning various aspects of rheumatic fever. These studies deal with the epidemiology, the prevalence determinations, the relationship with hemolytic streptococcal infections, the relationship to living conditions, the social distribution, the racial tendencies and the family charts of rheumatic fever. They should be of peculiar interest to those who are interested in epidemiological studies and in rheumatic fever itself.

ARTHRITIS IN MODERN PRACTICE

By Otto Steinbrocker, B.S., M.D.

Chief of the Arthritis Clinic, Bellevue Hospital,
New York City

W. B. Saunders Company, Philadelphia

In his preface the author states that "For some time there has existed an obvious need for a practical source of information incorporating the newer methods in the diagnosis and treatment of rheumatic disease. There seemed to be a place for a volume which would present only the essentials of diagnosis and treatment, somewhere between the exhaustive tests and the excellent summary of publications on rheumatism issued yearly under the auspices of the

American Committee on Rheumatism. My aim, therefore, has been to embody in concise and practical form a readily available source of commonly accepted diagnostic and therapeutic measures and those procedures which are proving useful but which are too new to have found a place in the textbooks. Pathology and other aspects of rheumatic disease are accordingly given only such attention as practical considerations dictate, and the extensive investigations in bacteriology and immunology are of necessity mentioned only briefly. In many instances the omission or mere reference to certain theories, observations and remedies often represents a reluctant compliance with the requirements of such a concise and practical volume as this."

The author is to be congratulated in thus stating his purpose and in sticking to it in the writing of this book. It is not only authoritative but readable and well illustrated.

SYNOPSIS OF GENITOURINARY DISEASES

By Austin I. Dodson, M.D., F.A.C.S.

Richmond, Virginia
Professor of Genitourinary Surgery, Medical
College of Virginia

Third Edition

The C. V. Mosby Company
and

SYNOPSIS OF ALLERGY

By Harry L. Alexander, M.D.

Professor of Clinical Medicine, Washington University School of Medicine, St. Louis
The C. V. Mosby Company

These are two more in the series of Synopsis books published by Mosby. Like their companions they are good for quick reference and for finding specific information without the necessity of considerable search and reading. Clearly written and well illustrated they are welcome editions to the series.

NUTRITIONAL DEFICIENCIES

John B. Youmans

J. B. Lippincott Co., Philadelphia

The three fields of medicine in which more progress has been made in the past few years and more controversy has arisen are the fields of endocrinology, chemotherapy, and nutritional deficiencies. This book deals with the last of these three.

Sanely and logically, the author presents the knowledge which has been accumulated in this field up to the present time. Presenting these facts, he draws conclusions which are based upon reasoning and not upon ethereal fancy—which is the method used by some.

This book is well written, readable, and authoritative

tive, and any physician who wants to have a single volume which compasses the field of nutritional deficiencies will do well to purchase this book.

INFANT NUTRITION

Marriott and Jeans, 3rd Edition
C. V. Mosby Co., St. Louis

This is the third edition of a book which has been accepted as a standard in its field for more than a decade.

Although the feeding of infants and children is on a far saner and safer basis today than it was ten or twenty years ago, there is still much confusion and misunderstanding with regard to the nutritional

requirements and necessities of the child or baby and it is the purpose of this book as pointed out by the original author, "to summarize present-day knowledge concerning the nutritional requirements of infants under normal and pathological conditions and to indicate the effects of failure to meet any or all of these requirements."

This volume should have a particular appeal for the man in general practice who devotes much of his time to the care of children. Here, within the bounds of one volume, he will find the information which he needs for the nutritional care of his little patients. It certainly should be a required book in the library of any young physician who is starting into practice.

NEWS ITEMS

Dr. J. P. Booker, Walhalla, S. C., recently reported for duty at Camp Gordon.

Dr. Charles N. Wyatt formerly of Greenville, has been promoted to the grade of Major in the U. S. Army Medical Corps.

Dr. W. P. Warner, Greenville, S. C., has been certified by the American Board of Orthopedic Surgery.

Dr. Jesse Gordon Seastrunk of Columbia has been elected an associate member of the American College of Chest Physicians.

Dr. F. P. Gaston, Rock Hill, S. C., reported for duty in the U. S. Army February 23, at Panama City, Florida.

Dr. D. L. Smith, Jr. of Spartanburg, has recently been called into service and is stationed at Stark Hospital, Charleston, S. C.

Dr. Lamar Lee, Florence, S. C., has recently been called into service and is stationed at McDill Field, Tampa, Fla.

Dr. Robert E. Seibels of Columbia, attended the South Atlantic Association of Obstetricians and Gynecologists held in Atlanta, February 6th and 7th.

Dr. and Mrs. Isaac Jenkins Mikell of Columbia are being congratulated on the birth of a son, Isaac Jenkins Mikell, Jr., on January 30th, 1942.

Dr. Wilburn E. Saye has opened offices in Columbia. His practice will be limited to internal medicine with special attention to neurology and psychiatry.

Dr. John G. Feder, a former member of the Greenville County Medical Society, who has been stationed at the Naval Base at Guam, has been captured by the Japanese and is held a prisoner near Tokyo. Mrs. Feder is now in Atlanta.

At a recent meeting of the Medical Society of South Carolina, Charleston, S. C., Dr. Marcus E. Cox of the Medical College Faculty, was elected a member of the Society.

WOMAN'S AUXILIARY SOUTH CAROLINA MEDICAL ASSOCIATION

President
Mrs. Richard M. Pollitzer
Greenville, S. C.

Publicity Secretary
Mrs. W. H. Lyday
Greenville, S. C.

Notice to the State Officers, Standing Committee Chairmen, and County Presidents.

The fiscal year of the national organization ends March 31st. In order that national officers and chairmen may make their reports on time it will be necessary for all state officers and chairmen to report to their respective national officers and chairmen by March 15th.

State officers, chairmen of committees and county presidents are requested to send a copy of their annual report to the State President, Mrs. R. M. Pollitzer, Greenville, S. C., before March 10th, 1942, in order that all activities of the auxiliaries may be incorporated in the president's report, which must be in the hands of the national president by March 15th.

Notes from the Woman's Auxiliary Historian

Projects of the State Historian this year are—County Auxiliary Histories; the Straight Trophy contest; and the Doctors' biographies.

The County Auxiliary historians are urged to bring their histories up to date, and send them in by the first of May.

Quite a bit of interest is being shown in the Straight Historical trophy, which is being given this year to the Auxiliary presenting the best paper on a historical subject concerning medicine in that particular locality.

For a number of years the State Historian of the Woman's Auxiliary has kept a file of

biographies of deceased South Carolina physicians, going back as far as memory in the communities served. This year we wish to stress these biographies. They will have historic interest, and be a well-deserved tribute to our former physicians. The Historian of each Auxiliary carries on this work, and we would ask for her the cooperation of the Doctors in gathering the biographies. It is especially interesting to have written up the lives of some real old-time "horse and buggy" Doctors. In counties where Auxiliaries are not formed, this work is not being done, and it is regrettable that the many splendid physicians there will not be written up in our history. Cannot the practicing physicians in these counties secure these biographies and send them to the State historian? We're counting on your help, Doctor!

Mrs. W. H. Powe,
State Historian
Woman's Auxiliary.

Feb. 13, 1942
Greenville, S. C.

Bulletin No. 1

Hadden Hall will be the headquarters for the Annual Meeting of the Woman's Auxiliary to the American Medical Association, which will be held in Atlantic City, New Jersey, June 8-12, 1942.

Requests for reservations should be sent immediately to Hadden Hall, Atlantic City, New Jersey.

Any Physician May Exhibit "When Bobby Goes to School" To The Public

Under the rules laid down by the American Academy of Pediatrics, their new educational-to-the-public film "When Bobby Goes to School" may be exhibited to the public by any licensed physician in the United States.

All that is required is that he obtain the endorsement by any officer of his county medical society. Endorsement blanks for this purpose may be obtained on application to the distributor, Mead

Johnson & Company, Evansville, Indiana.

Such endorsement, however, is not required for showings by licensed physicians to medical groups for the purpose of familiarizing them with the message of the film.

"When Bobby Goes to School" is a 16-mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed by physicians without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

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Surgical Difficulties With Special Reference To Small Town Surgeons

CARL A. WEST
CAMDEN, S. C.

The man who confines himself to surgery in the larger cities does not, in my opinion, carry the load of responsibility that the man in smaller cities carries. I say this because the man first mentioned invariably has 100% of his cases referred, and certainly with the patient comes a diagnosis—these diagnoses are often, or at least a good percentage of them, incorrect. I say this with no idea of reflection because at best a 60% correct diagnosis is about the average that we may expect. The point, however, is that those of us who do surgery in smaller centers do not by any means have such a high percentage of referred cases; and under such circumstances there is the concern first of making a diagnosis, then proceeding with the further responsibility of an operation. This combination wields a tremendous responsibility to be placed on any one man's shoulders.

Another point to be considered is the event of complications or death. That surgeon who had the burden of diagnosis partially shared by others should not and perhaps does not feel that he is wholly responsible for an unexpected and unpleasant result in a given case. On the other hand, the man who must or does assume the two responsibilities—diagnosis and necessary surgical procedure—feels the strain much more profoundly if he is honest.

So, with some of us, we are not only surgeons, but diagnosticians, therapists, investigators, and to some extent diplomats. At all

times, uppermost in our minds should be the immediate and future welfare of the patient.

With this thought in mind, it occurred to me that we may obtain mutual helpfulness with a discussion of some of the frequent and daily occurrences of mistaken diagnosis of the so-called acute abdomen. Diagnosis in cases with abdominal symptoms and signs is at times most difficult, because these manifestations may be associated with practically every disease in medicine.

Abdominal manifestations may be due to changes which are inflammatory, cardiovascular, respiratory, urogenital, systemic, gastro-intestinal, cerebrospinal, skeletal, muscular, endocrin, allergic, lymphatic, and neoplastic. It would be impracticable for me to go into full detail in order to bring out all facts that are pertinent regarding the differential diagnosis in these various conditions. Therefore, let us deal with the more salient points as each condition is taken up.

Inflammatory:

Appendicitis is by far the most frequently encountered acute abdominal condition, constituting perhaps 75% of such lesions. Diseases of the gall bladder and bile ducts rank next, and following perhaps in order of frequency are genito-urinal lesions, gastric and duodenal disorders, diseases of the female genital system, intestinal obstruction, and acute pancreatitis.

Despite its frequent occurrence, inflamma-

tion of the appendix may present symptoms to puzzle the most experienced; and on the other hand, the constant thought of this common condition may result in its erroneous diagnosis. Although urological and vesical lesions are probably more frequently overlooked, when an erroneous diagnosis of appendicitis is made appendiceal lesions may present symptoms and signs definitely referable to the urinary tract. An inflamed appendix lying close to the ureter may produce ureteritis with pain radiating to the penis and scrotum. Also, an acutely inflamed pelvic appendix is likely to produce a cystitis with typical urinary symptoms.

In a retroperitoneal position higher than its normal location a diseased appendix may produce abdominal findings which are indistinguishable from gall bladder diseases. Occasionally cases are seen in which, in spite of severe affection of appendix, there are few or no manifestations. Also, appendices are frequently unnecessarily removed. The fact that there are from eighteen to twenty thousand fatalities annually from acute appendicitis indicates that too little importance is placed upon appendicular colic.

In general, appendiceal inflammations are easily confused with inflammations of the right Fallopian tube because of the proximity of the two organs. This is particularly true in 25% of the cases in which the appendix occupies the pelvic position.

In cases with acute upper abdominal manifestations there is considerable difficulty in differentiating between an acute cholecystitis, perforated peptic ulcer, and acute pancreatitis. Most often it is impossible to make an accurate pre-operative diagnosis between these conditions, and as a matter of fact it is not entirely essential because the treatment in each instance is certainly that of an early operation, even though until lately delayed operation in acute cholecystitis has been considered preferable in the minds of some authors.

Lower right abdominal quadrant pain, tenderness and rigidity can occur in ruptured peptic ulcer as a result of intraperitoneal gravitation of gastric contents into the right iliac fossa. The presence of blood in the peritoneal cavity produces an acute irritation which is frequently difficult to distinguish from a bac-

terial peritonitis, particularly when elevation of temperature develops in the reactionary period. Intraperitoneal inflammations and hematomas such as urinary infections and retroperitoneal bleeding follow kidney rupture because they cause slanchmic irritation, produce fever, abdominal pain and adynamic ileus, which are identical with the manifestations in peritonitis.

In subcutaneous injuries to the abdomen with kidney rupture, because of the associated signs of ileus, it is frequently very difficult to eliminate pre-operatively the possibility of rupture of an intra-abdominal viscus. Although unnecessary laparotomy is undesirable in such cases, the danger of overlooking an intraperitoneal lesion is too great to assume that none exists. It would be better to make a small exploratory incision which would not necessarily add materially to the risk.

Clinical manifestations of acute appendicitis frequently occur in patients suffering from upper respiratory tract infections, especially tonsillitis and pharyngitis. These are undoubtedly due to the invasion of the appendicular lymphatics by the same micro-organisms producing the acute tonsillitis. Whereas usually in both infections the disease process subsides spontaneously, and not too infrequently the lesion progresses in the appendix necessitating its removal. In such cases appendicitis has been known to appear almost in epidemic form.

Cardiovascular:

Coronary disease manifested by attacks of severe abdominal pain, nausea, vomiting, elevation of temperature, and leukocytosis may be confused with upper abdominal lesions such as cholecystitis, perforated peptic ulcer, and pancreatitis. The hazard of an operation on a patient with coronary thrombosis is obvious. Therefore, every effort should be made to differentiate the two lesions. Whereas most of us are cognizant of the fact that coronary diseases can produce abdominal symptoms, too few of us realize that an acute abdominal lesion can produce symptoms of coronary disease. In such cases the evaluation of the symptoms and the correct diagnosis are particularly important. Although it is dangerous to mistake coronary disease for an acute abdominal emer-

gency, it is much worse to consider a case with perforated peptic ulcer as being that of a coronary disease.

Angina abdominalis described by Lakin is an entity in which, as a result of sclerosis of the celiac and mesenteric arteries, there occurs a sudden rise in the arterial pressure with the production of unlocalized widespread abdominal pain not accompanied by tenderness. This pain can usually be relieved by the administration of vasodilators such as amil nitrate and nitroglycerin.

Abdominal aneurysm can produce abdominal symptoms in a number of different ways: for instance, by mechanical pressure on contiguous viscera and nerves and by direct extension or rupture of the aneurysm. Sclerosis of the abdominal vessels with subsequent thrombosis produces splenic infarction and mesenteric thrombosis, which in turn produce manifestations of an acute abdominal catastrophe. Certainly most often the nature of the underlying lesion in such instances is not recognized until the abdomen is opened. In elderly individuals with evidence of arteriosclerosis elsewhere, one is justified in suspecting a similar intra-abdominal process complicated with thrombosis. Mesenteric thrombosis has been observed in relatively young individuals. This is particularly true in young adults who have subjected themselves to prolonged bouts with alcoholic inhibition.

Acute vascular occlusion of the mesenteric vessels can occur as a result of embolism. According to Dunphy, the pain in such instances is the result of anoxemia of the intestinal musculature. It is constant and unassociated with tenderness and rigidity until peritonitis supervenes. Of diagnostic importance is the contrast between the severity and persistence of the pain and the paucity of physical findings. Spasms of the mesenteric vessels doubtless produce pain which is similar to that experienced following occlusion of the vessels by a thrombus. The principal difference is that in thrombus the condition persists and is complicated by peritonitis, whereas the spasmodic condition of the mesenteric vessels subsides spontaneously. In a case, however, with

evidence of mesenteric occlusion one is not justified in delaying operation in order to determine pre-operatively whether the vascular occlusion is due to spasm or an organic lesion, because the complicating lesions—gangrene of the bowel, perforation, and peritonitis—offer such a prognosis that they should be prevented. Whereas an unnecessary operation is undesirable in the case with functional vascular occlusions, it is far less dangerous than delay in the case of any organic mesenteric vascular obliteration.

Respiratory:

It is well known that pneumonia, particularly in infants and children, can simulate acute abdominal conditions. The diagnosis is difficult in those cases in which the pulmonary lesion is centrally located and in which relatively few signs referable to the thorax can be demonstrated on physical examination.

McClure is of the opinion that observation of the respiratory abdominal movement is of great importance in differentiating between pulmonary and abdominal lesions. He states that in seventy-nine percent of sixty-nine definite cases of acute appendicitis the abdominal respiratory movement was definitely less than the thoracic movement, which is in contrast to the normal child in whom the amplitude of the abdominal curve is greater.

In patients with respiratory lesion such as pneumonia, there is no restriction of the abdominal respiratory movements. In only one instance of six cases of pneumonia, of which five were lobar and one of the post-operative type, was there such restriction in McClure's cases, although in all the cases there was abdominal tenderness and rigidity.

Riesman emphasizes that although it is extremely desirable to detect the pulmonary lesion in children, it is even more so in adults, because children with pneumonia who have an appendectomy usually recover in spite of the trauma, whereas adults rarely survive. Today, with the relatively unerring results of X-ray, it is practically inexcusable for a patient to be subjected to an abdominal operation, when there is any question as to pulmonary conditions, particularly pneumonia.

Urogenital:

Diseases of the kidneys and ureters frequently produce abdominal symptoms. The clinical manifestations of lesions in the upper part of the urinary tract resemble those of gastric ulcer, cholecystitis, etc.; whereas, those in the lower portion are often confused with appendicitis, intestinal obstruction, and salpingitis. Urinary tract disease may manifest itself only by symptoms referable to the gastro-intestinal tract; for instance, nausea, vomiting, anorexia, constipation, and occasionally diarrhea. Because of renal stasis, there is inadequate elimination of toxic products in the urine, resulting in gastro-intestinal manifestations through the effort on the part of the body to rid itself of these waste productions by other means. Also, the sympathetic nerves supplying the kidneys and ureters are intimately connected with the sympathetic nerve supply of the stomach and large and small intestines.

In suppurative conditions of the urologic system, such as perinephritic and renal abscesses in proximity to the peritoneum, a localized peritonitis can occur as a result of contiguity of the inflammatory process. It has been shown that an acute seminal vesiculitis with beginning epididymitis is likely to be confused with acute appendicitis, unless one is mindful of the possibility of the genital lesion.

The colicky pain associated with ureteral obstruction by pressure from without or within may be confused with appendicular colic because of the location of the pain and the presence of tenderness. A ureteral stone on the right side is particularly likely to be mistaken for appendicitis. One gentleman of authority in this connection has sarcastically remarked that the presence of an appendectomy scar is an extremely frequent indication of the presence of a calculus in the right ureter. The point that I wish to bring out here with reference to ureteral calculi is that it is far better and much less embarrassing to X-ray, or even cystoscope, a questionable case before the operation rather than to have to resort to these means after the operation.

Infections of the kidney with elevation of temperature, leukocytosis, and pain in the right side of the abdomen are particularly

likely to be confused with a suppurative appendicitis. As a rule, careful examination of the urine would reveal the presence of the urinary infection. Generally, also, the elevation of the temperature is higher and the leukocytosis is greater in the case of pyelitis than in the case of appendicitis. It is unusual in an uncomplicated case of appendicitis for the temperature to rise higher than 102, and the leukocyte count be greater than 20,000 per cubic millimeter.

Infections of the kidney pelvis may be difficult to diagnose in those cases in which the ureter is plugged because of the absence of urinary findings. Similarly, perinephritic abscesses which do not communicate with the kidney pelvis show no urinary changes. Abdominal trauma resulting in an injury to a kidney not infrequently produces symptoms referable only to the abdomen, the only manifestations are those of peritonitis resulting from peritoneal irritation and irritation of the retroperitoneal sympathetic nerves. Nausea and vomiting, abdominal distension, and ileus usually occur, and although the diagnosis of ureteral rupture can be made fairly accurately, one can never definitely rule out the possibility of an intra-abdominal injury until an exploration has been done. A laparotomy done correctly through a comparatively small opening is far preferable to watchful waiting in a case in which there is an associated intraperitoneal lesion. Occasionally distension of the urinary bladder will produce marked abdominal pain which may be confused with intraperitoneal tumor. In a case with low abdominal tumor apparently arising out of and fixed to the pelvis, examination should always be done after catheterization in order to eliminate the possibility of bladder distension.

In all acute abdominal lesions in the female it is essential to obtain a careful menstrual history in order not to overlook an ectopic gestation. Even after obtaining such a careful history, which may be misleading, one is likely to err. This is particularly true in cases in which, because of the escape of blood from the pelvis into the upper abdomen, the manifestations at the time the patient is seen may be those of an upper abdominal lesion. Inflammations of the appendix and right Fallopian tube

frequently produce similar symptoms and signs. The difficulty in the diagnosis arises because of the proximity of the two organs, and the similarity in the manifestations of the acute inflammatory processes occurring in them. Differentiating between these two processes is very essential, because acute salpingitis is best treated conservatively and nonoperatively, whereas the only treatment of acute appendicitis is its immediate removal while the inflammation is still confined to it. Smears from the urethra, Bartholin's glands, Skene's ducts, and the cervix are of great importance. If gonococci are found, the condition is most invariably salpingitis. An ovarian cyst with a twisted pedicle may present symptoms of peritonitis or intestinal obstruction.

Systemic:

Systemic infections frequently begin with abdominal symptoms, these being probably the result of associated toxemia, as emphasized by Carnett. There occurs in such cases an acute parietal pain and tenderness. For instance, in a large number of cases of acute hematogenous osteomyelitis the first manifestations are frequently vomiting, leukocytosis and nausea.

Cases of heavy metal poisoning may present symptoms apparently requiring immediate surgical intervention and relief. Fisher reports four cases of heavy metal poisoning with clinical manifestations of an acute abdominal lesion of which a diagnosis was not made until an autopsy. Metal poisoning may simulate very closely acute appendicitis, ruptured peptic ulcer, acute cholecystitis, kidney stones, coronary thrombosis, and acute gastro-enteritis. Important differential diagnostic points are that the patient with metal poisoning has no elevation of temperature and the abdomen is not distended. In such cases it would be well to study the vomitus, stools, urine, and the blood. In every individual with vague abdominal pain or colic, careful examination of the gums should be made in order to rule out the possibility of lead poisoning, particularly if the patient's occupation is one that requires work with lead—in this way a needless operation may be avoided.

Arachnoidism, particularly that caused by the bite of the black widow spider, is as-

sociated with symptoms which closely resemble an acute inflammatory process within the abdomen. These symptoms consist of severe abdominal pain with marked muscle rigidity. The rigidity which is associated with abdominal tenderness is not limited to the abdomen, but also occurs in other parts of the body. An important differential aid would be the determination of whether or not an insect bite had occurred. Many patients suffering from arachnoiditis have been unnecessarily subjected to laparotomy, which could easily have been avoided by a careful history and physical examination.

Other systemic conditions which occasionally give rise to abdominal manifestations are syphilis, measles, typhus fever, typhoid, undulant and paratyphoid fevers, septicemia, Banti's disease, and hemolytic icterus. In each instance a careful physical examination and laboratory investigation usually will reveal the true cause of the manifestations.

Other conditions demanding astute diagnosis and careful investigation are cerebro-spinal lesions, which frequently give rise to abdominal symptoms which are confused with acute abdominal conditions. For instance, epidural abscess, intrapontal tumors, or tumors of the cerebellum. Even emotional upsets frequently offer symptoms which may appear to be closely allied with severe abdominal pain. The manifestations in cases of this kind differ from lesions of the abdominal viscera in that there is no relation to the digestive cycle, defecation, urination, menstruation, or bodily exertion. The location of the pain in the emotional individual is also inconstant and migrates from one part of the abdomen to another.

Because the gastric crises of tabes dorsalis are associated with severe abdominal pain, a diagnosis of visceral perforation is too frequently made and many laparotomies have been performed unnecessarily. Complete examination of the patient, including blood Wasserman and spinal fluid, careful investigation of the pupillary and the tendon reflexes, facilitates the making of a correct diagnosis.

Herpes zoster produces severe abdominal pain; the pain often preceding the eruption by a number of days, making the differential diagnosis extremely difficult. It is likely to

be mistaken for appendicitis, cholecystitis, and renal disease.

In as much as 70% or more of all surgical conditions of the abdomen pertain to the appendix, I should like briefly to discuss the handling of the perforated appendix. As is so often the case these appendices occur in individuals who have been ill perhaps over a period of two or three days before admission to the hospital. Also in too many instances they have been given the rounds of laxatives by some members of the family. Many times I have felt the urge to place these cases under the Ochsner treatment but have never been able to convince myself that this is the proper thing to do regardless of the stage, once the diagnosis is definitely made. I think all of these advanced cases should be transfused if possible before operation and frequent small transfusions afterward as long as may seem necessary. Also a Levine tube is left in situ more or less indefinitely, certainly as long as it seems indicated. I think spinal anesthesia is the one of choice in these cases; of course for the reason that the field of vision is made so much more accessible. Also there is seldom the need of inserting abdominal pads, etc., which are very irritating to the intestines and which would

be necessary if inhalation anesthetic were given. If there is free pus in the peritoneal cavity a suction apparatus is in constant use. The appendix is always removed and all visible free pus is completely evacuated with the suction apparatus.

In the last several instances of appendicitis of this nature it has been my policy to spray the cavity with sulfathiazole crystals. The peritoneum is closed with interrupted sutures of 20-day-1 chronic catgut. The fascia is ligated very gently with 20-day-2 chromicized catgut. Interrupted silk-worm sutures are placed in the skin but not ligated before the 4th or 5th postoperative day. These patients are placed in a supine position for the first 4 hours post-operatively, after which they are placed in an exaggerated Fowler's position and constantly turned on the abdomen as well as to the sides. As soon as medicine can be retained, sulfathiazole is given in doses according to the age of the patient. I have handled some 8 or 10 cases of advanced appendicitis along this line during the past year. None of these were drained, there were no deaths, and no one of these patients remained in the hospital more than 14 days.

NEWS ITEMS

Fine progress has been made in organizing the Chester County Emergency Medical Defense Committee with Dr. W. J. Henry in full charge, and with three assistants: Dr. J. B. Floyd in Great Falls, S. C.; Dr. J. N. Gaston, Sr. in Lando, S. C.; and Dr. V. P. Patterson in Chester, S. C.

Dr. F. S. Chance, who has been practicing in Chester since May, 1937, was called to duty in the U. S. Navy and is now stationed at the Charleston Navy Yard. He was a graduate of the Georgia Medical School and interned at the Henry Ford Hospital in Detroit. He was accompanied to Charleston by his wife and three small children.

The office of Dr. G. A. Hennies was completely destroyed by the big Chester fire on Friday, January 16th. He is temporarily located in the Pryor Hospital with Dr. V. P. Patterson.

Dr. William Weston, Sr. of Columbia was the recipient of a silver platter and scroll presented by the Columbia Medical Society, at a special program during the regular meeting on March 19th. Dr. J. W. Jervy, Sr. of Greenville, a classmate and life long friend of Dr. Weston, paid a glowing tribute in which he extolled Dr. Weston as a scientist, a practicing physician and a gentleman. The platter and scroll were presented by Dr. W. R. Barron of Columbia.

Gonorrhea In The Female

ROWLAND F. ZEIGLER, JR., M.D.
SENECA, S. C.

In women, gonorrhea is usually more widespread and far more serious than in men, because of the relationship and complexity of the female genitourinary structures. It may be either acute or subacute at the onset but is especially characterized by its chronic complications.

Gonorrheal infection in women is due to direct contact with an infected male practically always, because the labia and vulvar hair protect the adult genital tract against contamination from the much maligned towels, toilet seats and bath tubs. The sensitivity of the gonococcus to light and heat also lends improbability to indirect transmission.

There is no natural immunity to gonorrheal infection, nor does one attack protect the individual against subsequent infection. Variations in degree of susceptibility, however, may be commonly observed. Gonorrhea is more readily communicable in the acute stage of the disease, but may be transmitted in the chronic stage, even after months of latency.

The period of incubation, before manifestation of symptoms is necessarily variable, but is usually from 3 to 12 days, the shorter period being more common when the contraction is from an acute infection. Due to the density of covering of the adult external genitalia, we find the pathological changes limited to certain definite areas—the urethra and its tubules, Bartholin's ducts and glands, and the cervix. Usually the urethra is first invaded by the gonococci, causing an ulceration of the mucosa and the necessary reaction within the submucosa which consists of cellular infiltration and consequent thickening of this area. This causes a bulging of the mucosa which is to be seen at the external urinary meatus in the form of a "pouting." There is marked hyperemia of the part. Coincident with the urethral infection, there is invasion of Skene's tubules in the floor of the urethra with the same pathological process taking place. The ducts of the vulvovaginal or Bartholin's glands are infected, resulting in a blocking of the ducts from edema.

Manifestations then take place in the gland itself by secondary invaders. There may be abscess formation of the gland, or as a result of destruction of glandular elements in time, and a replacement by scar tissue formation, a cicatricial nodule may replace the gland. Or, there may be a stricture of Bartholin's ducts without destruction of glandular elements, resulting in cyst formation, since the gland is a secreting structure. Infection of the glands of the cervix produces essentially the same picture, and in time the gonococci are replaced by secondary organisms, and fibrous tissue formation. Some say that the endocervix is the most frequent site of gonococcal infection in the female. The infection is usually harbored longest here and in Skene's ducts and glands.

In the adult, there are practically never any pathological changes in the vagina from gonorrhea because of the epithelial thickness and the absence of glands. *Verruca acuminata* may be seen on the external genitalia, however, as the result of a chronic gonorrheal discharge.

In children there is only a delicate mucous membrane lining the vulva and vagina which has no resistance to gonorrheal infection, so the ulceration involves not only the urethral and cervical canals, but the entire mucosa of the labia minora, vestibule, and vagina. Consequently, there is a more pronounced submucosal reaction resulting in extensive edema and hyperemia of the entire external genital tract. As an aftermath, there may be a complete obliteration of the vagina from adhesions.

As for the symptoms and signs of gonorrhea of the external generative organs, there are doubtless many cases in which there are practically no subjective symptoms present, especially in those women infected from a chronic male. Here the only sign may be a cervical discharge. In the typical case, however, there is first urinary urgency, frequency, and burning, followed in 24 to 48 hours by exaggeration of these symptoms and the appearance about the vulva of a mucopurulent exudate with burning and itching. Examination reveals a

redness and bulging of the urinary meatus with a creamy exudate escaping from the urethra. In a few days, inspection of the cervix shows a profuse mucopurulent exudate at the external os which is very tenaceous and contains stringy mucoid tendrils from the cervical glands. The cervix is swollen and the mucosa of the canal is visible at the orifice. This is an acute gonorrhea, and a careful smear from the urethra or cervix and a simple stain will readily prove it under the microscope; the gram negative, coffee-bean diplococci will appear intra and extracellular. In the chronic stages the picture is different, but the locations are the same. The external meatus still bulges, the mouths of Skene's tubules are visible, and often a slight pressure or milking beneath the urethra will express a small purulent drop-let from Skene's ducts. Bartholin's glands may be abscessed, cicatricial or cystic, and the cervix will show a yellowish mucopurulent discharge with reddening and probably erosion.

In children, gonorrhea may be contracted indirectly with unclean towels or tubs and infected enema tips or thermometers; or it may be contracted as a result of childish sexual curiosity and experimentation. Usually there is an infected careless parent in the home. A child with gonorrheal vulvovaginitis presents an extensive redness and enormous swelling of the visible genitalia with a purulent exudate covering the entire surface. With this, there is marked pain, tenderness, fever, and toxemia. Chronicity of gonorrhea in the child without proper treatment is quite a problem because of the many areas involved—each being a focus to eradicate.

Treatment

First, the adult patient should be warned about the infectiousness of her misfortune and taught the importance of simple personal hygiene in order to prevent infection being spread not only to other people but to the eyes. The patient should be put at absolute bed rest for at least two weeks. This is one of the best ways to prevent salpingitis. No enemata are permitted as there is danger of carrying infection to the rectal mucosa. The instillation of chemicals into the urethra or vagina during the acute stage of gonorrhea is

not only worthless, but dangerous. The infection may be pushed up to the bladder producing trigonitis, or bruising of the mucous membrane may result in deeper implantation of the gonococci. Forceful douching may force infection through the internal os and hasten salpingitis. Gentle saline or soap and water irrigations may be allowed, but simple local sponging is probably safer. Necessarily, coitus should be prohibited. Diets should be light with an abundance of fluids, and all condiments and alcoholic beverages should be forbidden. Today, with the appearance of the sulfonamide drugs, we have new and powerful weapons with which to fight this all too common disease. At present, sulfathiazole is the drug of choice. This should be given immediately on diagnosis, and the daily dose should be approximately equivalent to one half grain per pound of body weight. The average adult should have 15 grains four times daily for five days or longer. Fletcher² and his workers recommend repeating this course during the following menstrual period because observations of some have suggested that menstruation may be responsible for an exacerbation of the infection. There is apparently no contraindication to the use of urinary alkalizing agents or Lafayette's mixture for symptomatic relief from the urinary distress, along with sulfathiazole. Gonorrheal vulvovaginitis in children is also treated now with sulfathiazole. The suggested dosage is one half grain per pound of body weight per day with a maximum of 30 grains per day, for 7 to 10 days. Treatment with estrogenic substances has proven disappointing in affecting a bacteriological cure. The child should be isolated, but to bed and the affected parts covered at all times by a dressing of gauze or cotton, saturated with normal saline. Copious amounts of warm solutions may be poured over the parts to mechanically carry away exudate, but again no strong chemicals are used. After the acute stage has subsided, some of the silver salts may be instilled into the vagina every day. It is of primary importance in these little girls to prevent after adhesions and contractures of the vagina. This may be accomplished by gently packing the vagina with vaselined gauze or boric acid or mercurochrome ointment to prevent the abrad-

ed vaginal walls from adhering. Perhaps the new sulfathiazole ointment might prove of more benefit here. We are hoping, however, that early oral sulfathiazole therapy will eliminate much of these after effects and treatments.

The treatment of chronic gonorrhea in the adult is also sulfathiazole, but local measures may be indicated. Chronic endocervicitis responds little to chemical applications, but may be cured by linear cauterization with a fine cautery. This is an office procedure and practically painless. In extreme cases, a coring out of the cervix may be necessary to remove the endocervical glands. Urethral strictures must necessarily be dilated. Chronic infection in Skene's glands may be treated by injecting argyrol or 10 per cent silver nitrate with a blunt point needle. When this treatment fails, the ducts are best slit open over a probe and destroyed by the actual cautery, or the gland may be dissected out. A Bartholin gland abscess requires incision and drainage and perhaps later surgical excision. A Bartholin cyst or cicatrix must be surgically removed.

Gonorrhea of the Internal Organs of Generation

In the majority of cases, internal organ infection does not take place coincident with external infection. There may be no signs or symptoms of salpingitis for weeks to months after external infection. This depends much on the care of the patient during an external gonorrhea. The cervix is contracted at the internal os and frequently has a plug of mucus there which would tend to prevent upward spread. Just after menstruation is the most likely time for upward extension because the cervix is softened, the canal patent, and there is a more suitable medium for growth of the organisms. Therefore, we often see symptoms of tubal infection within a few days after menstruation. The gonococci reach the tubes by direct extension through the uterus, but there is practically no inflammation of the lining of the uterus. For some reason, the endometrium is resistant to the gonococcus. When the infection arrives at the tubes, a similar process is set up to that of gonorrhea in the urethra. Usually bilateral infection occurs at the same time. In the mildest form, the

inflammation is not severe enough to cause a sticking together of the lining of the tubes. This is catarrhal salpingitis, and recovery may be complete, the lumen being left patent so that a pregnancy might occur. In severe ulceration there is frequently an agglutination of the fimbriated ends or the walls of the lumen, resulting in a sacculization of the tube. Purulent material confined in this type tube constitutes a pyosalpinx, or the commonly called "pus tubes." (I recently operated on a typical bilateral pyosalpinx just two months post-partum). Changes in the submucosa and muscularis, with fibrosis, result in a thickening and twisting of the tube, the result being chronic suppurative salpingitis. The cilia in the tubes are destroyed and strictures and diverticula may be produced in the lumen. If the fimbriated end of the tube is open in such cases, ectopic pregnancy is a likely sequel. In many instances, a secondary infection, probably blood borne, displaces the gonococci. In other cases, after the acute infection, the epithelial cells may continue to pour out an exudate. The clear exudate stretches the tube and thins out its walls. This is hydrosalpinx, and it usually follows a mild reaction coupled with sealing off of the tube. In the purulent types of salpingitis, before the end of the tube seals off, there may be a dripping of pus into the pouch of Douglas (pelvic peritoneum). This causes a peritoneal reaction, its later organization resulting in adhesions. Intestines and adnexa may all become matted together as a result of this localized peritonitis. There may be little pockets of pus or clear fluid sealed off in this mass. The spilled infection at times is so severe that it does not subside and there is a frank abscess formation in the cul-de-sac. Salpingitis isthmica nodosa is a typical chronic salpingitis with small fibroid-like nodules scattered along the tubes and at the cornua of the uterus. To leave such a cornual nodule at surgery is to leave a focus of infection.

The ovary does not become infected from gonorrheal salpingitis unless there are breaks in its surface, but organization of exudate on the surface of the ovary may prevent ovulation. Often during the course of salpingitis, the fimbriated end of the tube becomes adhered to the ovary. If ovulation occurs here now,

infection gains entrance into the substance of the ovary, producing a tubo-ovarian abscess which often results in complete ovarian substance destruction.

Inasmuch as gonorrhea is etiologic in 30 to 50 per cent of sterilities in the female, one can judge the frequency of destructive tubal lesions from this source.

There is of course no composite group of symptoms to fit all cases of salpingitis. In a typical acute catarrhal salpingitis, there is low abdominal and pelvic pain of a rather sharp onset, with a fairly rapid rise in temperature and pulse rate. Often the onset is a few days after menstruation. There rapidly develops tenderness and rigidity over the lower abdomen. The temperature is usually of a septic type, and this picture lasts from 1 to 2 weeks, with a gradual subsidence of all symptoms and signs in a favorable, uncomplicated case. Internal pelvic examination reveals evidences of external gonorrheal infection, extreme tenderness in the fornices and on uterine manipulation, and a sensation of increased heat in the vagina. The total W. B. C. is elevated with an increase in polys.

In chronic suppurative salpingitis, history is of primary importance. There is always a history of some past pelvic infection with recurring attacks varying in severity. At practically all times there is a sensation of distress in the lower abdomen, especially after physical exertion or coitus. This patient is chronically tender to palpation over the lower abdomen. Pelvic examination again shows evidences of old gonorrheal infection, and bimanual examination now presents more or less fixation of the cervix, a sensation of resistance in the fornices, and tumorfaction of greater or lesser extent in one or both sides. These tumorfactions are always tender and firm to touch. Chronic pelvis peritonitis presents a similar picture.

An acute pelvic abscess usually gives constant, continued lower abdominal pain with marked tenderness and muscle spasm, and high continuous fever. Vaginally, the pelvis is exquisitely tender, the cervix is usually elevated toward the symphysis, and there is fluctuation behind the cervix. The patient does not improve like one with an acute salpingitis, her

condition producing persistent and progressive symptomatology.

Salpingitis in its various forms must be carefully differentiated from the following:

- (1) Acute appendicitis
- (2) Acute pyelitis with cystitis
- (3) Ectopic pregnancy
- (4) Abortion, complete or incomplete, with infection
- (5) Ureteral calculus
- (6) Torsion of ovarian cyst or tumor at its pedicle
- (7) Acute intestinal obstruction
- (8) Intestinal perforation
- (9) Fibroid uterus with inflammation
- (10) Torsion of a pedunculated fibroid
- (11) Endometriosis
- (12) Tuberculous peritonitis

Treatment

The treatment of acute salpingitis is conservative. The patient is put at absolute bed rest for the duration, and chemotherapy should be instituted at once. Here, again, sulfathiazole is thought to be the drug of choice, and is given in similar doses as for urethritis. An ice bag to the lower abdomen, anodynes for comfort, and a copious fluid intake (subcutaneously or intravenously if necessary) constitute the remainder of treatment. Operative interference in the acute stage of salpingitis has been abandoned. It is possible that the early institution of proper therapy may result not only in the death of the organisms, but in the complete subsidence of tissue changes so that the structures rapidly return to normal.

The treatment of chronic salpingitis depends on the extent of the disease, the disability produced, and the age of the patient. Again chemotherapy, in the form of sulfathiazole, should be resorted to, along with rest, both physical and sexual. Heat applied locally to the reproductive organs by prolonged hot douches, Elliott treatments, and diathermy may serve to hasten the retrogression of the inflammation and to minimize the resultant chronic residual changes.

Surgery should be resorted to when all other measures fail and the patient is incapacitated. Conservative management should be given a most thorough trial in young women, but in

women near the menopause, removal of the pelvic organs does not entail so great a loss. Surgical treatment consists of laparotomy with removal of all infected structures. An exception is pelvic abscess which can be drained vaginally at times. The first aim of the surgeon should be conservation, especially conserving ovaries in whole or in part when possible, but foci should not be left that demand another laparotomy later.

With the advent of the sulfonamide group of drugs, perhaps now gonorrheal infection of the internal generative organs will be lessened. The outlook is certainly optimistic, but it will still require many years of experience to determine if this chemotherapy will decrease the hazards of those residual changes which so often necessitate major surgical procedures.

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Dr. and Mrs. I. J. Mikell are receiving congratulations upon the arrival of a son. Mrs. Mikell was the former Miss Carolina Simmons.

Dr. Edmond D. Wells, a graduate from the University of Louisville, Ky., recently came to Chester to take over the eye, ear, nose, and throat work of Dr. J. P. Young who has retired from practice after twenty-six years of service.

Dr. Wells interned at the Louisville City Hospital, the Eye, Ear, Nose, and Throat Hospital of Chicago, and was at Tulane in Los Angeles, California when he made his decision to continue his profession here in Chester.

His wife and two children are with him.

Dr. J. P. Young of Chester has recently announced his retirement after 48 years of active medical practice. Born in Ninety Six, S. C., Dr. Young graduated from Furman University and then from the Medical School of the University of Maryland. He began his practice in South Carolina in Richburg and then moved to Chester in 1917 where he has limited his work to ophthalmology and otolaryngology.

The Journal congratulates Dr. Young upon the great work which he has done and wishes for him many more years of happy living.

News has been received of a double wedding which took place in Baltimore on February 28. Miss Peggy Elizabeth Lollis of Baltimore was married to Dr. Marion Burnside Hook of Columbia, and Miss Margaret Pitts of Baltimore was married to Dr. Gilbert Collings of Clemson, S. C.

Dr. F. Normer Andrews has located in Branchville for the practice of medicine and surgery. Dr. Andrews is originally from Sumter. He is a graduate of the Medical College of the State of South Carolina and for the past ten years has practiced his profession in Bluefield, W. Va.

Friends of Dr. Charles M. Lide of Columbia who is now serving in the United States Navy will be delighted to hear that he has just received a promotion. He has been transferred to New Orleans, La., and has been made Assistant Procurement Officer for Medical Personnel for the 8th Naval District.

Dr. Homer M. Eargle was made chief of Staff of the Tri-County Hospital at Orangeburg. Dr. Augusta A. Willis was reelected secretary. The executive committee is composed of Dr. C. A. Mobley, Dr. G. C. Bolin and Dr. G. M. Truluck.

Pre- and Post-Operative Treatment of Prostatism

ALLEN C. BRADHAM, M.D.
ANDERSON, S. C.

Prostatism is herewith defined as a state of urinary disturbance, with associated symptoms, due to a benign or malignant enlargement of the prostate gland. In its manifest form, it is characterized by frequency of urination, slowness in beginning the urinary act, nocturia from one to many times, sensation of fullness over the bladder immediately following urination, haematuria, and ultimately, acute urinary retention and overflow incontinence. Old men, victims of this condition, usually have a marked hypertension, a flushed face, and often symptoms of myocardial failure.

There are many gradations of prostatism between that of the mildest symptoms and that of the classical case described above. In benign hypertrophy, in the absence of symptoms of urinary obstruction, surgery is not indicated. We have recourse to such palliative measures as periodic prostatic massages, gentle urethral dilatations by sounds or Kollman dilator, urethro-vesicle irrigations, hot rectal irrigations and Sitz baths, plenty of fluids by mouth.

Hormonal therapy for prostatism is still in the experimental stage and should not be considered a panacea. It is not a substitute for surgical relief in major prostatic obstruction nor is it of any value in prostatic obstruction due to carcinoma or sclerosis. It does appear to be of some benefit in two types of cases. It will serve as a palliative measure to relieve distressing symptoms of frequent nocturia, strangury, etc., which permits rest and an opportunity to build up the general system for future surgery; and in those cases who refuse surgery or are unsuitable because of marked cardio-renal damage. Secondly, it is of value as an adjunct treatment in early prostatism with slight or moderate urinary frequency, nocturia, and low urinary residual. The most commonly employed androgenic substance is synthetically prepared testosterone propionate in oil and it is advisable to supplement this with simultaneous injections of androstine ampouls A and B. While striking

clinical improvement is often obtained from hormonal therapy, no investigators have reported, at least to my knowledge (any appreciable diminution in the size of the hyperplastic gland as shown by cystoscopic or rectal examination. Another disadvantage is the tendency to stimulate sexual activity which is often dangerous in these individuals. At best, the benefits of hormonal therapy are temporary and require a maintenance dosage.

Assuming now that we have determined the need for surgery, let us consider the preparation of the patient. This preparation is of equal importance in the patient's recovery to that of the operation itself. It consists, primarily, of a properly managed urinary drainage, and the period of drainage may vary from three days to a year or more. Usually a period of one to two weeks drainage will improve the kidney function, lower the blood pressure, and produce a state of maximal functional efficiency.

In cases with high residual urine and prolonged urinary obstruction, caution is advised in the sudden emptying of a chronically distended bladder. Many of these cases are borderline uremics and such a procedure will often suffice to throw them into a uremic state. Gradual decompression of the bladder is recommended and there are several ways of accomplishing this. One method is that of fixing in a retention catheter and connecting this to one of the many apparatuses on the market. Another means is that of intermittent catheterization, replacing the amount of urine withdrawn each time with a slightly smaller amount of sterile boric acid solution or other antiseptic. The method we have been using in Memphis for the past few years consists in fixing in a 16 F Foley catheter by urethra. The residual urine is withdrawn, measured, and replaced by boric acid solution. The amount of boric acid solution used is one half ounce less than the amount of residual urine withdrawn. Each time the patient wishes to void,

or every two hours, the catheter is released and bladder drained. Boric acid solution is injected into the bladder, using one-half ounce less than was injected the time before. Finally, when decompression is complete, the catheter is connected to a Turley irrigator. This consists of a 1000 c. c. gravity bottle with a drainage tubing fitted on a glass T tube. One end of the T tube is attached to the catheter, the other to a rubber tube leading into a bedside bottle. The irrigation bottle is filled with a 1-5000 solution of neutral acriflavine and, if hemorrhage or blood clots are present, 2% sodium citrate is added. The nurse is instructed to unclamp the irrigation tube and to fill the bladder twice daily or oftener. The patient is urged to sit up beside his bed and to consume at least 3000 c. c. of water or fruit juices each 24 hours. Urinary antiseptics in the form of hexamethylenamine and acid sodium phosphate, mandelamine, or one of the sulphonamides are used. We have found that tincture of belladonna helps to allay bladder spasm. Codein sulphate or one of the barbiturates usually suffice for sedation.

In the presence of severe prostatic infection, the indwelling urethral catheter may interfere with drainage of the prostatic ducts. Also, one encounters an occasional case that will not tolerate a foreign body in the posterior urethra. Or the bladder may be inadequately drained by a urethral catheter due to the configuration of the prostate. These cases do better with suprapubic cystotomy and by thus permitting the operative area to be kept at rest, congestion and edema are kept to a minimum which constitutes an important factor in bleeding at the time of operation.

Like an athlete who has reached a maximum of perfection after a period of training, these old men should show clinical as well as laboratory improvement and express a willingness and desire to proceed with the remainder of the operation.

As to kidney function, our chief reliance is placed on the two hour phenolsulphonphthalein test, and from 60 to 85% of the dye injected should be excreted in two hours. Forty to sixty per cent should be excreted in the first hour and when the greater amount is excreted the second hour, it is indicative of renal im-

pairment and poor capillary absorption. Non-protein nitrogen and creatinine determinations are of great value in determining the amount of renal damage, as excretion of these is carried on largely by the kidneys alone. Any marked increase of non-protein nitrogen above the normal levels of 25-35 milligrams per one hundred c. c. whole blood) or a creatinine reading of 3.5 to 4 milligrams is indicative of advanced renal damage.

If finances of the patient permit, further valuable aids are K. U. B. X-rays, excretory pyelograms, electrocardiogram and complete blood studies. I feel that a plain K. U. B. X-ray is imperative, for such conditions as polycystic disease, renal calculi and tumour of the kidney must be ruled out prior to operation. On the day preceding operation the patient must be given a complete physical examination.

The immediate post-operative care of the prostatectomy patient is that of combatting shock and of watching for hemorrhage. Repeated blood pressure determinations, narcotic sedation, application of local heat, fluids in the form of glucose and saline intravenously or by mouth if possible—all of these should be employed. The urinary output should average from 2000 c. c. to 3000 c. c. each twenty four hours.

Following transurethral resection, a 24F Foley catheter is fixed in the bladder and this is connected to the Turley irrigator using 2% sodium citrate in 1-5000 neutral acriflavine as an irrigation fluid. By the suprapubic method, the suprapubic tube is connected in the same way, the urethral tube of the Pilcher bag is drained into a sterile urinal until drainage is clear. If the drainage is free of blood and the temperature is normal, in the resection case, the bladder is distended on the fourth day, the patient is allowed to expel the catheter and is encouraged to sit up out of bed. With the suprapubic case, tension on the Pilcher bag is released in three to four hours and the bag removed in forty-eight hours. At the time of removal, an 18F to 20F Foley catheter is fixed in through the urethra and connected to the irrigator. This is left in from ten to fourteen days depending upon the healing of the supra-pubic wound and the general con-

dition of the patient. In the perineal case, the tube is left in until wounds are healed.

All of these cases are put in a semi-erect position as soon as feasible both for the psychological affect and as a safe-guard against hypostatic pneumonia. Better drainage is thus promoted. The supra-pubic and perineal cases should sit up twenty to thirty minutes on the seventh day. Under normal conditions, the resection case may go home under supervision of his home doctor.

The main complications to watch for, at this stage, are delayed hemorrhage, emboli, and myocardial failure. Usually, the fixation of a large retention catheter and the evacuation of blood clots will suffice to put the bladder at rest and control bleeding. I do not know of any way to prevent emboli other than careful supervision of exercise and avoidance of straining at stool. Some men feel that the use of a hard enema tip is a particular hazard.

The most feared delayed complication is urinary incontinence, whether it be partial or total, whether temporary or complete. If it follows prostatectomy, incontinence is usually due to injury of the external sphincter or to the nerves governing it. Rarely, it may be due to deposits of scar tissue, residuals nodules of prostatic tissue, or folds of mucous membrane so situated that they interfere with sphincter action. Either the external or internal sphincter is capable of restraining urine so that incontinence may be partial or complete. Partial incontinence denotes sphincter weakness; total incontinence paralysis. In supra-pubic prostatectomy, complete incontinence after difficult enucleation is probably due to injury of the sphincter nerve supply, or excessive dilatation of the muscles. Incontinence subsequent to perineal prostatectomy is usually a result of direct injury to the sphincters. It is not uncommon to see temporary incontinence follow resection and this often lasts for six to eight months. This is especially liable to occur if a hemostatic bag and traction on the sphincter is employed. These are distressing cases and often tax the patience of both doctor and patient to the utmost. There is one ray of hope, however, unless obviously complete incontinence exists; partial incontinence due to sphincter weakness will ultimately recover.

Measures recommended for correction are the giving of strychnine sulphate, exercise of the sphincters by frequent interruption of the urinary stream, and faradic stimulation. It has been our custom to dilate the sphincters with the Kollman dilator, fill the bladder with antiseptic solution and have the patient practice releasing and interrupting the stream. He is given detailed instructions as to how to fill his bladder by gravity can at home, and is told to carry out this daily exercise. Once or twice a month the sphincter is stimulated by electrocoagulation or faradic current, using the cystoscope and electrode.

Lowsley, Denning, Player, Callander, and Abeshouse, have designed methods of operative correction for sphincter weakness. The usual procedures consist of plication of the Bulbo-cavernosus muscle with ribbon gut or transplantation of the Gracilis muscle around the bladder neck.

A remote complication is recurrence of obstruction several years later. This occurs in 0.5 per cent of prostatectomy cases and is due to hyperplasia of nodules contained in the false capsule of the prostate. It may also be due to hyperplasia of nodules left behind at the time of operation. In resection cases, the cause is basically the same. This complication can often be corrected by means of the resectoscope and the procedure is well tolerated.

Two weeks after going home, the resection case reports to the office and his residual urine is measured and his bladder irrigated. The amount of pus in the urine is noted as the bladder neck is usually not healed. The prostatectomy case should have his sphincter dilated with 26F to 28F sounds or the Kollman dilator three to four weeks post-operatively. This prevents contraction of the circular wound from cicatricial heading.

Occasionally the supra-pubic wound proves refractive and requires cauterization or curettage. When there is redundancy of the bladder mucosa through the wound edges, only surgical correction will prove effective.

While the post-prostatectomy patient should be under the care and supervision of his doctor for an indefinite period, with care as to diet and elimination, he may well outlive his contemporaries.

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MEDICINE'S GREATEST GIFT

Were a group of physicians to be asked the question "What is the greatest gift which Medicine has given mankind?" each man present would probably give a different answer. Morphine—ether—insulin—the spirit of scientific study—loyalty to the ideal of service—these and others would be cited as the outstanding contribution to men and women.

In our opinion, however, the greatest gift which Medicine has given to mankind is a composite of the lives of those physicians who have worked and toiled so that the world might be a healthier and better place in which to live. And of those men and of the lives which they lived, the followers of Hippocrates are justly proud.

We are fortunate in South Carolina in having physicians who stand for the best that there is in medicine. Working day in and day out for their fellow men, they have not only elevated the communities in which they live but they have had a profound influence on the entire state. South Carolina is a better state in which to live and to rear our children because these men have spent their years within its bounds.

All too frequently, words of praise and appreciation for lives of good men are left unsaid until those men have passed into the great beyond. We prefer to say them while they are still living so that they will know that their lives will not have been spent in vain.

To those men who have lead us through the trying years and who are still serving as bulwarks of strength in this day of turmoil and stress—we pay our tribute. To Robert Wilson of Charleston, to L. M. Stokes of Walterboro, to Frank McLeod of Florence, to William Weston and LeGrand Guerry of Columbia, to Wilkie Jervey of Greenville, to Lesesne Smith of Spartanburg, to Buck Pressley of Due West, to Fred Williams of the State Hospital, to Adam Hayne of the State Board of Health, and to many others whose names could well be added to this list we say,

"Your work has been a boon and your lives have been an inspiration to the men and the women and the children of the state which you have called home. We are proud of you, we—the younger men and colleagues in your profession. You have done a magnificent job and we are deeply appreciative. It is our hope and prayer that the later years of your life will be crowned with joy and that when the day comes when you will be forced to lay down the stethoscope and scalpel, we will be able to build an even better state, building upon the foundations which you have laid."

THE STARS

As the physician dropped in his big chair by the radio and reached for the evening paper, he realized how tired he was. It was not only physical weariness—although it had been a trying day with patients in the office and home—but there was also a sense of mental and emotional exhaustion which he could not escape.

The entire world was in a turmoil and he, a part of the world, had been caught in the maelstrom. What was going on in the Pacific—was Russia really making progress against Germany—how far had this country progressed in its preparation for offensive conflict—was there any justification in Labor's demands for continuing the forty hour week—where would the Axis hit next—would the Allied Nations eventually win—was the whole program of Civilian Defense an unnecessary waste of effort or would it play a vital part in the defense of the country—how many doctors would this country need in its armed forces—was it his duty to volunteer for immediate service or should he stay at home and plug along in the work which he was now doing—what of his family if he donned a uniform—could he adequately care for their present and future needs—the questions tumbled through his mind until he felt he could stand no more.

How often he had resolved to stop listening to the radio, to stop reading the papers, to stop talking to his friends about the war and the future. But the urge was always too great to be disregarded and even now he turned the button and dialed the radio for the 8:55 news bulletin.

The front door opened and in walked his next door neighbor and friend of years standing.

"Bill," the visitor said, "you look tired. Come on out with me for a little walk. It will help take the fog out of your brain."

"I think I will, John," the doctor replied, "but sit down and let's get the news before we go."

"One trouble with you now is that you listen to the radio too much. Turn it off and let's go."

The night was clear and cool and the men walked briskly down the street. As they reached the edge of town, John laid a hand on Bill's shoulder.

"Stop walking and look up a while."

The physician stood still. Lifting his head, he gazed into the star-studded sky. There was the Big Dipper, the Little Dipper, Orion, the Milky Way, the North Star. He suddenly realized how long it had been since he had noticed these companions of his boyhood.

His friend's voice broke the silence. "I am no doctor, Bill, but I think I know what your trouble is. Your thoughts and emotions are so intermingled with the present and its problems that you have forgotten the stars. Those stars you now see are the same stars which you saw as a boy. They are the same stars that guided Columbus on his trip across the Atlantic, that shone down upon the shepherds on the hills of Galilee. And they are the same stars that will shine down upon our children's children when you and I and Hitler and Yamashita are crumbling under the sod. A poet has called them, 'The eternal jewels.'"

"When you are tired and discouraged, Bill, take your ears from the radio and your eyes from the newspaper and look at the stars. They stand for the things that last and not for the things that change in this world of ours. They help us to remember the things that really matter, the things that will endure—love and justice and honesty and peace and God. You and I need to raise our eyes and look at the stars more and more, Bill, as we face a future which appears so uncertain."

The physician grasped his friend by the arm and slowly turned toward home.

The sense of weariness had gone.

ANNUAL MEETING**May 19, 20, 21****Columbia**

When it became known that the annual meeting could not be held at Myrtle Beach, invitations were extended to the South Carolina Medical Association to hold its sessions in Columbia and in Greenville. In view of the fact that Columbia had first extended her invitation last spring and that the 1941 meeting had been held in Greenville, the Council decided to accept the gracious invitation of the Columbia Medical Society and the meeting will be held in that city on the days already chosen—May 19, 20, 21.

Under the leadership of the President of the Society, Dr. F. E. Zemp, the physicians of Columbia have already made big strides in their plans. The following chairmen of committees have been selected:

General Chairman—Dr. G. T. McCutchen
 Commercial Exhibits—Dr. C. G. Spivey
 Entertainment—Dr. Wm. Weston, Jr.
 Registration and Badges—Dr. W. A. Hart
 Finances—Dr. M. W. Cheatham
 Program—Dr. N. B. Heyward
 Banquet—Dr. F. E. Zemp
 Ladies Entertainment—Dr. T. D. Dotherer

Other chairmen will be selected and the list of all chairmen and committee members will be printed in the official program.

The Columbia Hotel will be the headquarters of the convention.

Under the direction of the Scientific Committee, Dr. N. B. Heyward, Chairman, the program is being rounded into final shape. At the present time, plans call for the following:

Tuesday, May 19th

10:30 a. m.—Meeting of Council

3:00 p. m.—House of Delegates called to order

Wednesday, May 20th

9:00 a. m.—Session opens

11:00 a. m.—Report of Memorial Committee

11:30 a. m.—President's Address

12:00 noon—Address—Dr. Halsey Barker, Associate Professor of Medicine, Johns Hopkins Medical School. Subject: The Sulfonamides

1:00 p. m. Alumni Luncheon

2:30 p. m. Address—Lt. Col. David Grant, Chief Medical Officer, Army Air Corps

4:00 p. m.—The Question Box—Dr. N. B. Heyward, presiding.

(This is a new feature which is being introduced this year for the first time. Eight specialists, outstanding in their respective fields, will be seated upon the rostrum and will attempt to answer any and all questions thrown at them by those in the audience. The questions must be specific and the answers will be brief. It is hoped that physicians will avail themselves of this opportunity to secure answers to major or minor problems which they have experienced in their practice.)

8:00 p. m.—Annual Banquet for members and their wives

Address—Brig. General Lewis B. Hershey, Director of Selective Service.

Thursday, May 21st

9:30 Session opens

During the morning session two invited guests will deliver addresses.

1:00 p. m. —Adjournment.

In addition to the addresses listed above, papers will be presented by members of the Association.

With such a program, it is hoped that all members of the Association will plan to attend every session of the Annual Meeting.

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Dr. A. E. Poliakoff, Abbeville, Secretary-Treasurer
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Dr. N. G. Quantz, Rock Hill, Secretary-Treasurer

PRACTITIONER'S PAGE

This page is devoted to the everyday problems of the physician in practice. Members of the Association are urged to suggest subjects for articles which they desire discussed. Members are also urged to submit questions. Each question will be referred to some physician who is qualified to make answer, and if the question involves a subject of general interest, the answer will be printed.

NIACIN

Roe E. Remington, Ph.D., D.Sc.

Professor of Nutrition

Medical College of the State of South Carolina

The pellagra-preventive vitamin, called PP by Goldberger, and identified as nicotinic acid or nicotinic acid amide by Elvehjem, has now been renamed *niacin* to avoid the popular objection to anything that sounds like nicotine.

Given in adequate amounts, the pure substance has produced dramatic recoveries from the clearly defined symptoms of pellagra, viz—dermatitis, digestive disturbances usually manifest on diarrhoea, and mental disturbances leading to dementia. Most authorities, however, have now taken the common-sense view that since pellagra is a deficiency disease, and ordinary diets lacking in niacin are always and inevitably deficient in other factors of the B-complex such as thiamin, riboflavin, pyridoxin, and pantothenic acid, a continuing control of pellagra, or even a complete remission of all symptoms, cannot be obtained by giving niacin alone. For the prompt relief of acute and distressing symptoms it is used to advantage in pure form, but should be accompanied or followed as soon as practical by either a correction of diet so as to provide adequate amounts of all the B vitamins, or by the prescription of B-complex concentrates. Large doses of niacin produce a transient flushing and burning of the skin which may be painful, but this effect is less pronounced if it is taken at meal-time.

The standard daily allowance to maintain health has been set at 15 to 23 milligrams for an adult, children 4 to 20 milligrams according to age and sex. These figures may be revised as time progresses, since this is one of the more recently identified members of the vitamin family. Like all the other vitamins of the B-complex, excretion follows ingestion: i. e. the vitamin is not stored and should be provided daily.

Clinical laboratory tests have been developed, whereby the niacin content of blood or urine can be measured, but the very rapidity of excretion makes such tests more indicative of the intake for that particular day than of the state of the patient. Tests indicating the percentage of a given dose retained under standardized dietary treatment would be more illuminating. For the present, the well-known indicia of pellagra, and the reaction of the patient to medication with niacin are of greater diagnostic value than any laboratory test.

For the long time handling of pellagra, the economic status of the patient is the chief difficulty, since it is usually a disease of poverty. Diets that are well supplied with lean meats, eggs, and milk provide a fully adequate amount of niacin but are beyond the means of many persons. Increased use of peanuts and edible soy beans should be encouraged. The use of "enriched" flour and bread, compulsory in South Carolina after August 1, 1942, will add materially to the niacin supply of low-cost diets.

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J. I. WARING, M.D., CHARLESTON, S. C.

SULFAPYRIDINE AND SULFATHIAZOLE THERAPY IN LOBAR PNEUMONIA, BY W. H. KELLEY. CHARLESTON, SOUTH. M. J. 35:203, FEBRUARY, 1942.

A careful study of a large group of cases of lobar pneumonia, with evidence to indicate that in treatment sulfathiazole possesses certain advantages over sulfapyridine. Nausea and vomiting were far less frequent with sulfathiazole, and blood levels were better maintained. Serum therapy was found useful in cases in which the drugs failed to produce improvement.

TREATMENT OF FRACTURES OF THE LOWER THIRD OF THE HUMERUS, BY F. A. HOSHALL. CHARLESTON, SOUTH. M. J. 34:1152, NOVEMBER, 1941.

The author concludes that: "1. All supracondylar fractures with displacement should be immobilized in a shoulder spica, as the sagging of an arm cast will cause posterior displacement after reduction. 2. Conservative treatment of fractures of the distal third of the shaft, supracondylar and T or intercondylar, by means of the Steinmann pin and shoulder spica, gives gratifying results. 3. If a pin through the olecranon does not give a satisfactory result, it will not interfere with a further operative procedure. 4. All displaced medial and lateral condylar fractures require open reduction."

BILATERAL TUBAL PREGNANCY, BY M. E. COX AND MATTHEW STEINBERG. CHARLESTON, AM. J. OF OBST. AND GYNEC. 43:120, JANUARY, 1942.

A case report of a rare condition found at operation.

THE MARINE HOSPITALS OF CHARLESTON, BY J. I. WARING. CHARLESTON, BULL. OF THE HISTORY OF MEDICINE 10:651, DECEMBER, 1941.

An account of the several hospitals of Charleston which cared for mariners, and more particularly a history of the old but most recent marine hospital designed by Robert Mills and in part still standing.

INTESTINAL PERFORATION FROM INGESTED FISH-BONE, BY G. H. BUNCH, A. F. BURNSIDE, AND L. J. BRANNON. COLUMBIA, AM. J. OF SURG. 55:169, JANUARY, 1942.

A thorough discussion of the fate of the fishbone in the human body, and five cases in which the ingestion of bones resulted in perforation of the intestine.

THE PRINCIPLE OF TRACTION IN THE TREATMENT OF URETEROLITHIASIS, BY R. P. FINNEY. SPARTANBURG, J. A. M. A. 117:2129, DECEMBER 20, 1941.

Dr. Finney finds the ureter very uncooperative and ureteral forceps very unsatisfactory. By lassoing a calculus with a ureteral catheter equipped with a loop of silk suture and a wire stilet, he has achieved 94% success.

THE TECHNIC OF INDUCED MALARIA AS USED IN THE SOUTH CAROLINA STATE HOSPITAL, BY MAYNE, BRUCE AND YOUNG, M. D. VENERAL DISEASE INFORM. 22:271, AUGUST, 1941.

A description of the details of the method. Quartan malaria is the choice type and 15 to 20 paroxysms are desirable for the treatment of neurosyphilis.

SODOKU-RAT-BITE FEVER, BY BEACH, M. W. AND RAVENEL, B. O. CHARLESTON, ARCH. OF PEDIATRICS 58:685, NOVEMBER, 1941.

Report of a case in an infant, age 5 weeks, in Charleston who was treated successfully with sulfarsphenamine.

AN ATTEMPT TO CORRECT ASYMMETRY IN LEG LENGTH BY ROENTGEN IRRADIATION, BY JUDY, W. S. GREENVILLE, AM. J. ROENTGENOLOGY 46:237, AUGUST, 1941.

The author attempted to retard growth of the sound leg by radiation of the epiphyseal lines at the knee. Evidence indicates that growth is deterred by such treatment. Cases are reported.

STRAY RADIATION UNDER ACTUAL CONDITIONS, BY TAFT, R. B. CHARLESTON. AM. J. ROENTGEN-
OLOGY 46:373, SEPTEMBER, 1941.

Dr. Taft used an ionization chamber to de-

tect wandering rays, and concludes comfortably that in a modern and carefully conducted laboratory, no one should receive harmful radiation.

SOCIETY REPORTS

Eighth District Medical Association. The annual meeting was held in Denmark on February 25th. The scientific program consisted of the following papers: Cervical Arthritis—Dr. W. R. Mead, Florence, S. C., Tomography — Dr. Augusta E. Willis, Orangeburg, S. C., Chemical Warfare—Col. Ragnar E. Johnson, Fort Jackson, S. C. During the dinner brief talks were made by the officers of the State Association, Dr. G. M. Truluck, President, Dr. T. A. Pitts, President-Elect and Dr. J. P. Price, Secretary.

Greenville County Society. Regular meeting March 9th. Dr. F. P. Coleman of Columbia spoke on Surgical Problems in Tuberculosis, Dr. R. Kyle Brown of Greenville on Diagnosis of Tuberculosis. Members of the Board of Directors of Hopewell Tuberculosis Association were present.

Medical Society of South Carolina (Charleston). At the meeting on February 24th a scientific program on Immunization was presented as follows: Immunization in Childhood—Dr. William J. Ball; Immunization in Tropical Diseases—Dr. Francis B. Johnson; Typhoid Prophylaxis—Dr. Leon Banov. Dr. H. R. Pratt-Thomas of the Medical College Faculty, was elected to membership in the Society.

At the meeting on March 10th Dr. Robert Wilson, Jr. made a few remarks on Civilian Defense Medical Service. An illustrated talk on Electrocardiographic Interpretation was given by Dr. John A. Boone of the Medical College Faculty.

Chester County Medical Society. The Society held its monthly meeting on March 3rd, in the Pryor Hospital. Dr. V. P. Patterson was in charge of the program. Dr. T. A. Pitts of Columbia gave a talk on Cancer Palliation. Dr. Hinson of Rock Hill, Dr. Williams of Columbia and Dr. Edward Wells were guests at the meeting. Dr. J. B. Floyd of Great Falls presided.

Columbia Medical Society. Dr. Edward B. Sheenan of Boston, Mass., spoke at the regular meeting on March 19th, his subject Cancer of the Cervix. Dr. E. W. Masters spoke on the uses of the chick embryo as a culture medium. Dr. William Weston, Sr. was the recipient of a silver platter and scroll presented by the Medical Society.

Chesterfield County Medical Society. Dr. Graham Reid of Charlotte was the guest speaker at the March meeting held in Pageland.

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Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

Case of Drs. Robert Wilson, Jr., and
Edward F. Parker

ABSTRACT NO. 458

Present Illness: Twenty-nine year old white man admitted to hospital on 8-15-41 with chief complaint of "headaches and vomiting." The headaches, apparently generalized had existed for two years, and had increased in severity during the several months prior to admission. Had to give up his job as mechanic in iceplant. Had a "rising" or furuncle of left leg in January, 1941 which was followed by left inguinal lymphadenopathy. Furuncle promptly healed after draining pus. Mass in inguinal region failed to respond to sulfanilamide. Nausea and vomiting began several weeks before admission. Two attacks of unconsciousness in June, 1941. Began to complain of intermittent numbness and tingling of left arm and right leg. Lost 40-50 pounds in weight.

Physical Examination: B. P. 140/90.

Showed a well developed and nourished young man, apparently in considerable pain. Memory and orientation apparently normal. Motor and auditory speech normal. Pupils dilated (hematropine.) Marked choking of both discs. Vision grossly normal. Neck stiff. Tongue protruded in mid-line. Small tumor, within the skin of left side of neck, rounded, mould with skin, non-tender. Lungs and heart normal. No abdominal organs palpable. Healed right rectus incision. Firm, irregular, non-tender mass about 8 cm. in diameter above left inguinal ligament. Left inguinal lymph nodes moderately enlarged, firm, discrete, non-tender. Scar on lateral aspect of lower portion of left leg. No pathological reflexes or remarkable neurologic changes.

Laboratory Data: WBC 9500. Pmn. 71%. Hb. 14 gms.

Urinalysis showed 8-10 WBC/HPF and 2 plus hyaline and fine granular casts. Blood and spinal fluid and Wassermann—negative. 8-16-41: Spinal fluid pressure 600 mm. plus water 12 cc. removed. Closing pressure 150 mm. Cell count 2. Total Protein 135 mg. 8-20-41: Cisternal puncture—Initial pressure—100 mm. water. Flow slow. Very slightly Xanthochronic. Cell count 16. Lymph 95. Polys 5. RBC—about 215/cu. mm.

Course: Remained stuporous most of the time. Headaches continued. Became comatose on 8-19-41 and remained so, ceasing to breath suddenly on 8-20-41. Heart continued to beat for short time after respirations ceased.

Student W. R. Tuten, Jr. (Presenting): There are a few additional facts that may be added to the

protocol. This patient was in another hospital two weeks prior to his admission here and a biopsy of the inguinal nodes on the left showed "adenocarcinoma." This information was obtained from a relative of the patient. Another biopsy was performed here on 8-19-41. He became comatose on the same day and did not live long after that.

Dr. Wilson (Conducting): Mr. Maret, suppose you start the discussion and give your opinion of the case.

Student Maret: I think the first things to think about is the increased intracranial pressure which is definitely indicated by the persistent headaches of two days duration. Nausea and vomiting and the increased spinal fluid pressure. All this points to an intracranial space consuming mass. Although there is evidence of some intracranial mass, what the mass is is another thing. We ought to consider brain tumor or brain abscess or both.

Dr. Wilson: Can you differentiate between the two and localize either one or the other?

Student Maret: Both of them may give similar symptoms. As far as localizing the mass goes, I cannot progress very far. There are no pathological reflexes and no neurological changes that might give us a clue. The numbness in the left arm and leg may be a hint, but it is certainly very little to go on. It may be a so-called "silent tumor." Tumors in the frontal lobes, in the right temporal lobe, and those meningeal tumors which grow slowly and press slightly on the cerebral cortex so that other portions of the brain partially take over the impaired function and thus produce no definite signs, are all possibilities.

Dr. Wilson: Your diagnosis then is some type of brain tumor. Do you think he had this tumor for two years?

Student Maret: Yes sir, I think so.

Dr. Wilson: Do you think it was a primary or secondary tumor?

Student Maret: That is another question I do not know. 4% of brain tumors are primary.

Dr. Wilson: And 96% secondary?

Student Maret: I believe I read that last night somewhere (laughter).

Dr. Wilson: What do you make of the previous history of the mass in the right inguinal region?

Student Maret: I think this may be explained by the furuncle on the leg with subsequent adenitis.

Dr. Wilson: You think it was an infectious mass—an infectious type of lymphadenitis?

Student Maret: Yes sir, an infectious type.

Dr. Wilson: What was the mass exactly?

Student Maret: Just enlarged lymph nodes.

Dr. Wilson: What lymph nodes?

Student Maret: Possibly the mesenteric nodes.

Dr. Wilson: Do you think this had any connection with the brain tumor?

Student Maret: There must be some relationship, but I cannot tie the two together. I would certainly expect the lesions in the brain to be secondary from the lymph nodes and not vice versa.

Dr. Wilson: One more question, Mr. Maret, can you localize this tumor?

Student Maret: It was apparently somewhere about the brain stem.

Dr. Wilson: Could it have been in the brain stem?

Student Maret: Yes, sir.

Dr. Wilson: Wouldn't there have been motor disturbances if it had been in the brain stem?

Student Maret: I think it could have been in the brain stem without motor disturbances.

Dr. Wilson: What did the patient die of?

Student Maret: From pressure on the respiratory center in the brain stem.

Dr. Wilson: Mr. Powe, in what ways do you differ with Mr. Maret?

Student Powe: I do not see any definite way of localizing this tumor and I am not sure that it had been present for two years. It certainly could not have been very malignant, and have lasted that long. Perhaps the initial headaches were due to something else.

Dr. Wilson: By what route could adenocarcinoma of the inguinal region get to the brain?

Student Powe: It would have traveled by means of the blood stream. Cells get into the thoracic duct and from there into the general circulation.

Dr. Wilson: Should there have been evidence of a lung tumor before the cerebral manifestations became apparent?

Student Powe: I do not know. I think the presence of a small tumor in the lung might not have showed up.

Dr. Wilson: Nothing was found in the lung. You think then this man had a primary malignant brain tumor?

Student Powe: I would rather not commit myself.

Dr. Wilson: What do you think the mass in the abdomen had to do with it?

Student Powe: I do not know, unless the tumor of the inguinal nodes had extended to involve some intra-abdominal structure.

Dr. Wilson: Mr. Herbert, what do you think about this? I think the diagnosis of brain tumor is well established and I assume that you agree with this. How could you go about localizing it?

Student Herbert: I think there must have been some blockage of the spinal fluid circulation about the cerebellar pontine angle. This is suggested by the fact that the man died suddenly from respiratory failure and also by the rapid and marked fall in the spinal fluid pressure brought about by the removal of such a small quantity of fluid. I do not

believe it could have been within the brain stem for two years duration.

Dr. Wilson: Was the tumor primary or secondary?

Student Herbert: I do not know. With a positive biopsy for tumor from the inguinal glands, it certainly follows that the abdominal mass is due to further regional metastases, but what this had to do with the brain I do not know.

Dr. Wilson: Mr. J. J. Stokes, how would you go about localizing the brain tumor?

Student Stokes: We do not have any localizing symptoms at all. I think all the symptoms can be explained on the basis of increased intracranial pressure alone.

Dr. Wilson: Mr. Snoddy, how do you explain the two attacks of unconsciousness that he had?

Student Snoddy: I think that increased intracranial pressure will cause unconsciousness. There also may be irritation of portions of the brain adjacent to the tumor with loss of consciousness. Hemorrhage and necrosis within the tumor can produce sudden fluctuations in the intracranial pressure also.

Dr. Wilson: It was extremely difficult to get a consistent history from the man, because he was suffering intensely when he came to the hospital. Dr. Parker do you have anything to say?

Dr. Parker: I would like to ask Mr. Mood, that granting it was adenocarcinoma in the inguinal lymph nodes, where does he think it came from?

Student Mood: The rectum is the only possibility that occurs to me.

Dr. Parker: Does adenocarcinoma occur in the lower extremities?

Student Mood: I don't believe it does.

Dr. Wilson: Dr. Parker and I were not satisfied with the diagnosis of "adenocarcinoma" and Dr. Parker performed another biopsy on the iliac lymph nodes and he noted crisp gray tissue showing many blackened areas which he suspected to be melanoma and which the pathological report proved.

Dr. Pratt-Thomas (Presenting gross specimen): This case was presented because it teaches a definite lesson. This man had a malignant melanoma involving the fronto-parietal region on the right. Here you see the ragged cystic cavity containing clot and necrotic tumor tissue containing deposits of black pigment. It was so situated as to be relatively "silent", although as you see the adjacent brain tissue posterior and medial to the tumor is beginning to show some yellowish softening and this would have eventually involved the basal ganglia and internal capsule. There was massive fresh hemorrhage within the tumor at the time of autopsy and this may have been the immediate cause of this man's death at that particular time as it would undoubtedly further increase the already high intracranial pressure.

Of course, this is a metastatic lesion and it undoubtedly had its origin from an infected mole or

nevus on his leg, although the histologic evidence for this is now quite scant. The mass within the abdomen was of course the enlarged chain of iliac nodes on the left due to the metastasis of the malignant melanoma from its original site on the leg.

(Demonstrating slides by microprojection)—Here you see a section through the scar of the "healed furuncle" and all we can find of the original tumor is a small group of nevus cells within the dermis. These cells on close examination, however, show some multinucleated and hyperchromatic forms and there is a suggestion of invasion of the overlying epithelium. You could not make a diagnosis of malignancy on this alone however. Here you see a foreign body giant cell, no doubt a relic of the inflammatory process. Now it stands to reason that the original tumor cells were destroyed by the inflammatory process, so as to leave scarcely any trace. Whether or not the inflammatory process was itself the exciting factor for malignant change in this nevus is problematical.

It does again emphasize however that one has to be wary of any mole which shows evidence of irritation or unusual growth.

Drs. L. G. Goldsmith, Lonita Boggs and Gertrude Holmes attended the New Orleans Graduate Medical Assembly, March 2-5.

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AROUND THE STATE

Effort will be made to secure and publish news concerning the activities of individual physicians, and of the various medical societies of the state. Members of the Association, and especially secretaries of county societies, are urged to send in news items to the Editor.

DEATHS

Dr. Thomas Hiller Dreher of St. Matthews died on March 1. Born in 1861 in Lexington County Dr. Dreher took his academic work at Newberry College and his medical work at the College of Physicians and Surgeons in Baltimore. He located in St. Matthews in 1892 and practiced medicine there until the time of his death.

In 1920 Dr. Dreher became editor of the Calhoun Times and held this position through the years. He was widely known as a student

and writer and was awarded the degree of LL.D. by Newberry College. In addition to his work as physician and editor he was active in religious and civic enterprises. Dr. Dreher is survived by his widow.

Dr. Rembert E. Broadway of Summerton, S. C., died at the Thomey Hospital in Sumter. Born in 1883, Dr. Broadway received his medical education at the Medical College in Charleston and was graduated in 1911. For the past few years he has been engaged in the practice of medicine in Summerton.

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SOUTH CAROLINA MEDICAL ASSOCIATION

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Greenville, S. C.

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Mrs. W. H. Lyday
Greenville, S. C.

JANE TODD CRAWFORD

In behalf of the memory of Jane Todd Crawford, I bring greetings to the Woman's Auxiliary of the South Carolina Medical Association. What a privilege we have to keep before us as our ideal this heroic woman who was willing if necessary, to give her life for suffering womanhood.

The Medical Auxiliary has presented three beds in memory of Jane Todd Crawford that are now in use in hospitals in the state. These beds are appropriately marked and information is at hand telling of the life of the woman in whose memory they were given, as well as her benefactor, whose skill and courage made possible her recovery. And, as we think of that remarkable surgeon we pause to thank the Great Physician who guided Jane Todd Crawford and Dr. Ephriam McDowell to endure the great trial which has meant complete restoration to health for thousands of women since that memorable day, December 13, 1809.

The Auxiliary members have been assessed twenty-five cents per member to go to the Jane Todd Crawford fund. This fund is used to place one hospital bed each year in one of our smaller hospitals of the state.

Mrs. R. D. Hill
S. C. State Chairman
Jane Todd Crawford Fund.

The annual meeting will be held in Columbia, May 19-21.

Mrs. Thomas Furman has assumed the office of president of the Auxiliary to the Greenville County Medical Society and Mrs. Irving

S. Barksdale was named president-elect at the annual meeting of the organization held at the home of Mrs. R. M. Pollitzer. Other officers were also named at the meeting.

Mrs. M. Nachman is first vice-president; Mrs. R. M. Dacus, Jr., second vice-president; Mrs. Kyle Brown, recording secretary; Mrs. J. W. McLean, corresponding secretary; Mrs. Perry Bates, treasurer, and Mrs. W. H. Powe, historian.

Mrs. Nachman is the retiring president.

A few more months and the members of the Woman's Auxiliary to the American Medical Association will be arriving in Atlantic City, New Jersey, for their Annual Convention, June 8-12.

Have you made your reservations? If not, send your request *at once* to Haddon Hall, Atlantic City, New Jersey.

Mrs. W. B. Furman was reelected president of the Pickens County Medical Auxiliary at the annual business meeting held at the home of Mrs. J. W. Potts.

Other officers elected were Mrs. J. L. Valley of Pickens, Vice President; Mrs. J. H. Cutchins of Easley, Secretary; Mrs. J. P. Swords of Liberty, Treasurer.

Mrs. Valley had charge of the devotional, after which Mrs. J. W. Kitchin discussed "Medical Care of Soldiers."

During the business session plans were made to entertain the Pickens County Medical Association at a supper on "Doctor's Day."

TO OUR READERS

The following corporations have agreed to advertise with us during the coming year. Please remember this when their representatives call upon you.

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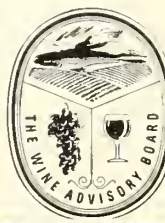
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This advertisement is printed by the wine growers of California acting through the Wine Advisory Board, 85 Second Street, San Francisco. The non-profit Wine Advisory Board invites your requests for further information about California wines.

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South Carolina Medical Association

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Pilonidal Cyst

DAVID F. ADCOCK, M.D.
COLUMBIA, S. C.

History

Pilonidal cyst was first described by Warren in 1867, and the present name was first used by Hodges in 1880. Coccygeal dimple, posterior umbilicus, and postsacral dermoid are other names which have been used.

Origin

There are many opinions as to the cause of the pilonidal cyst. Hodges thought it was due to hair invagination. Tate said it was residue of the caudal appendage. Stone thinks that

it is a similiar structure to the preen gland of fowls, and it has been suggested that it may possibly be a remnant of the scent gland which occurs in some species of animals in early adult life. It is certain that the human embryo in its ontogeny recapitulates the phylogeny of the race and that this recapitulation is more rapid anteriorly than posteriorly. Therefore, as the fowls and lower animals have scent glands, preen glands and various appendages in this area, it is logical to assume that this may occur. Certain it is that other embryological structures occur here that are not typical pilonidal cysts, as this illustration will show (Fig. A), being taken of a young girl with normal hair configuration elsewhere. That the development anteriorly is more rapid than posteriorly can be proven in any chick slide, which shows that the neural tube separates from the surface last in the sacral area, and as glial tissue has been found in pilonidal cysts, it may be that the skin and neural canal have cells displaced abnormally due to the increased age and toughness at the caudal end. (Figures 1, 2, and 3.)

Occurrence

The occurrence is much more frequent in the white race and in the male during early adult life, at which time the scent gland of some species of animals and the preen gland of fowls is developing. The occurrence of a true pilonidal cyst, containing hair is a relatively rare condition, occurring in our largest hospital over a period of three years only once in



Figure A.—A patch of long coarse hair occurring at the usual site of the pilonidal cyst.

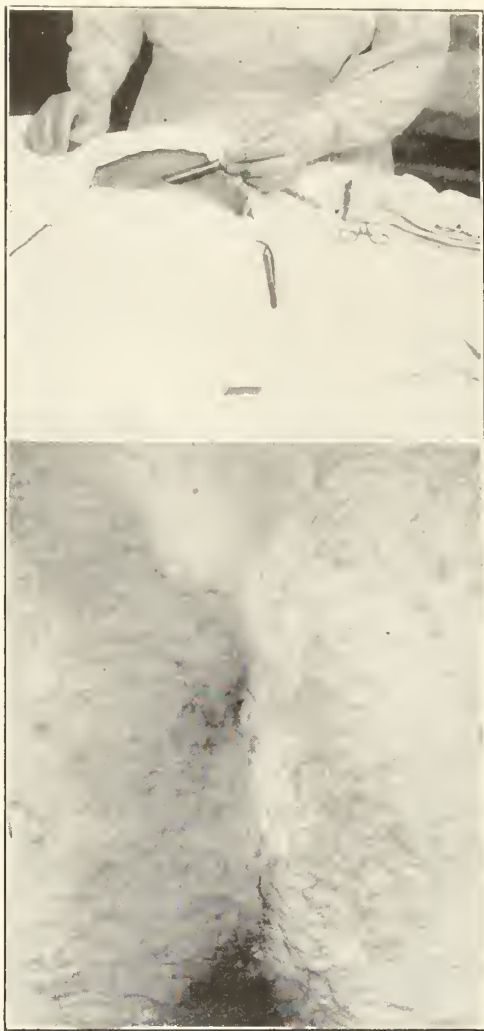


Figure B.—Outlining direction of cyst

Figure C.—Pilonidal cyst protruding without pressure.

each 2,227 admissions. Most men report from 20% to 40% in women. In 12 cases that I have either assisted in or done myself there was no negro and only one woman. It certainly occurs more frequently in the hairy male and female. One of our cases was a circus strong man.

Symptoms and Signs

The patient is usually seen as a result of a discharge from this sinus, or because of tenderness and pain due to infection, which is occasionally started by trauma.

Differential Diagnosis

The differential diagnosis in pilonidal sinus and cyst has to be made from fistula in ano, osteomyelitis of sacrum, and sacro-coccygeal

dimple. This dimple must not be confused with pilonidal sinus even though it be deep and infected. This dimple in contra-distinction to the pilonidal sinus or cyst always points toward the anus.

Pathology

Pilonidal cysts are lined with stratified squamous epithelium. Besides sweat glands, hair follicles, and hair in the cyst, neural buds with the end of nerve tissue have been reported and observed in pathological sections. If it is not so deeply placed it may be covered by only a thin, bluish appearing area of epithelium or the hair may protrude from the sinus as a tail. No communication has ever been shown to the rectum, nor any other endodermal tissue.

Treatment

Treatment consists of excision of the cyst and small cysts can be easily excised and closed completely, or with a soft small rubber tube drain to be removed within 48 hours to take care of any serum that may occur. The classic wide half moon skin incision cannot be closed as too much tension will be placed upon the sutures, and it takes from 6 to 9 weeks for this wound to heal by granulation. When closure is planned the vertical incision may need a secondary incision laterally to take care of any little protrusion of the cyst for any distance from the midline. This can frequently be demonstrated by putting methylene blue into the cyst with slight pressure with a syringe. (Figures B and C.) Frequently the cyst opening exactly fits the tip of the syringe. We have closed 12 consecutive pilonidal cysts. Two operations in this series were postponed

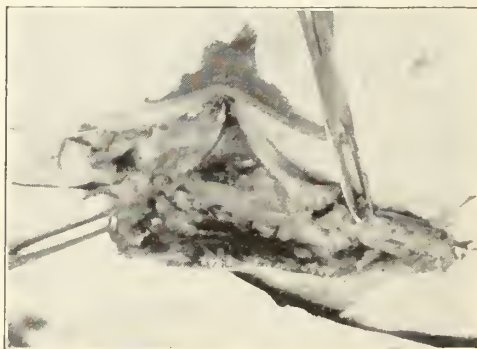


Figure D.—Complete excision of pilonidal cyst with lateral protrusion.

due to the extensiveness of the infection, and treated symptomatically, and operated upon at a later date. There has been one recurrence, several strands of hair that were evidently left at the first operation being removed later under local. One wound broke down and had to be dressed for several weeks, healing finally completely. One case of osteomyelitis occurred, but this case had a temperature out of proportion to his cyst infection on the date of operation. Primary closure is more likely to be successful when skin has been conserved. (Figure D.) The sutures in closing a pilonidal cyst must pick up the fascia over the posterior portion of the sacrum to prevent dead space in the wound, as shown in the following illustration.

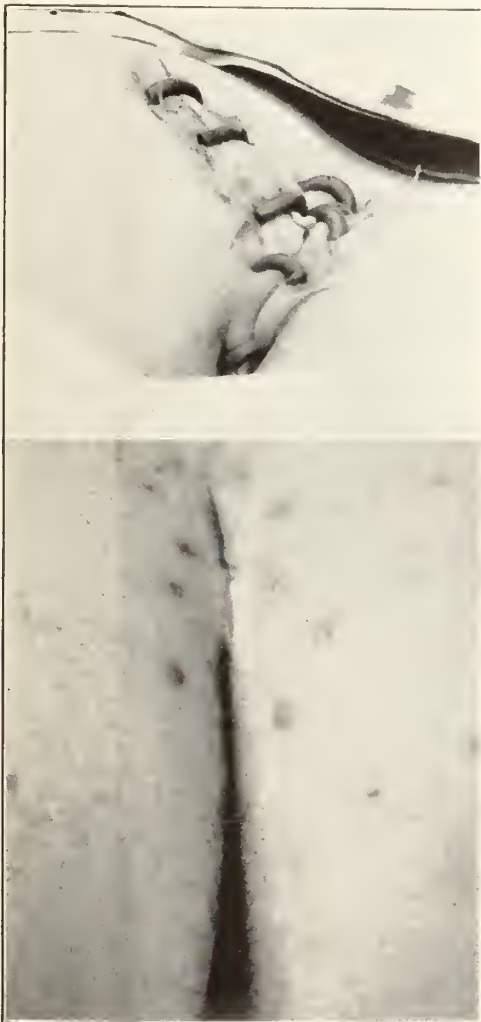


Figure E.—Closure of pilonidal cyst with lateral protrusion.

Figure F.—Final scar showing punctate suture scars.

(Figure E.) The sutures should carry small rubber tubing or they will bury themselves so deeply that they will be difficult to remove and this tubing prevents transverse suture scars, leaving only small spots at the entrance of the suture. (Figure F.) To relieve tension Lahey recommends the second incision and

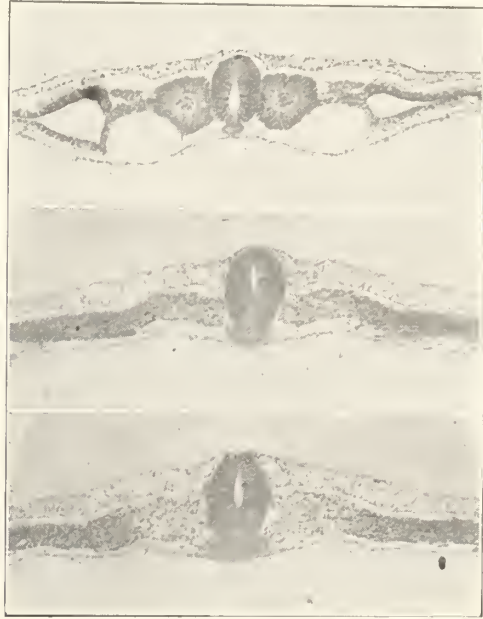


Figure 1.—Section through anterior portion of the chick embryo showing separation from the neural tube.

Figure 2.—Mid-section of 33 hour chick shows neural tube closed but no separation.

Figure 3.—Section more caudad in same chick showing neural tube with less advancement.

Swinton and Hodge recommend a V shaped incision laterally with a closure at the point of V. If primary closure is used pressure must be maintained by a sea sponge or vertical narrow dressings in the depression between the buttocks.

Summary and Conclusion

Small pilonidal cysts can be closed primarily with no difficulty. The percentage of cysts that may be closed after operation can be increased by treating the patient symptomatically when the infection is widespread, until it subsides. The wound must be dressed with consistent pressure and the sutures must eliminate dead space.

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The Treatment of Hypertension Thiocyanate in a Normal Person

JAMES T. QUATTLEBAUM, M.D.
COLUMBIA, S. C.

Only an extensive review of the literature on hypertension reveals the enormous amount that is being written and the great volume of work which is being done on this subject at the present time. It seems timely to summarize some of this work since radical changes in the management of hypertension are already necessary in the light of recent advancement in this field. The urologist, the medical man, and the surgeon must be aware of the present ideas in order to be prepared for surgical decisions especially affecting the kidneys. The medical treatment of hypertension is admittedly unsatisfactory but this seems all the more reason for exhaustive study of each case, and the greatest diligence in utilizing the benefits which we do have at hand.

Already cases of hypertension are being cured when unilateral kidney disease is found and removed.^{1 2 3 4 5 6 7} There is, also, already a tendency to unwarranted optimism in the removal of kidneys in certain cases. As pointed out by Braasch⁸ and others, nephrectomy in hypertensive cases should be performed only for recognized surgical indications until further knowledge is developed in regard to the causes of hypertension due to kidney disease. It seems generally agreed, however, that in chronic atrophic pyelonephritis associated with hypertension the kidney should

be removed provided there is no disease of the other kidney and provided, also, the hypertension has not been present over too long a period.² Though conservatism in regard to the removal of kidneys should be exercised, pending further developments, a careful study of each case should certainly be carried out. It is believed that all cases of hypertension must be studied with extreme care in regard to the kidneys, in most cases having an intravenous pyelogram. Urinalyses and kidney function tests often do not hint of unilateral disease of the kidney. Furthermore, all kidney operations will demand subsequent observation over a long period with a constant eye on the blood pressure. The possibility of the development of hypertension following the operation or the kidney disease itself should certainly deserve consideration.

New ideas on surgical decisions in kidney disease are developing since the splendid work of Page,^{9 10 11 12} Goldblatt,^{13 14 15 16 17} Grollman,¹⁸ Harrison,¹⁹ and others. A summary of the information which they have learned about the relationship of the kidneys to hypertension in experimental animals is more than worthy of the attention of anyone in medicine. Forty-four years ago it was learned that a pressor substance was to be found in the renal cortex.²⁰ This substance has been called renin, a ther-

molabile protein-like material which has a generalized vasoconstrictor action and which appears to be independent of the central nervous system. Under certain conditions it may be found in increased concentrations with experimental renal hypertension. This type of hypertension is either prevented or poorly maintained in the absence of the adrenal glands.²¹ Renin rapidly loses its pressor property (tachyphylaxis) except in the presence of an activator. This activator (also called hypertensinogen),²² when combined with renin produces a substance known as angiotonin (also called hypertensin). This also requires an activator which differs from renin activator. The nature of these substances is rapidly being determined by certain workers as mentioned above.^{12 15 18 19 23} Also, in addition to the substances related to increasing pressor activity it is believed that there are substances in the kidney and possibly in other portions of the body which are antipressor or renin inhibitor (anti-renin, renin anti-serum,²⁴ hypertensinase²²). The exact nature of these substances has not been determined. Both renin and angiotonin decrease the blood flow in the renal artery and increase the arterial pressure.²⁵ Splenoreno-pexy reduces experimental hypertension.²⁶

Much of this information has been gained from dogs by one of two methods: either the arteries to the kidneys were partially occluded by means of a clamp^{14 15 16 17} or by wrapping the kidneys in cellophane, producing a perinephritis.⁹ Sustained hypertension by the clamp methods necessitates clamping both renal arteries. The method of Page,⁹ producing perinephritis, has apparently produced hypertension when only one kidney was injured. In experiments done by various workers on the relationship of kidney disease or injury to hypertension the following methods are of interest even to the clinician. These date from 1905 as reviewed by Goldblatt:²⁷ (1) bilateral nephrectomy produces no rise; (2) reduction of the amount of functioning renal tissue, some workers said this produced a rise, some claimed it did not; (3) reduction of the amount of renal substance by coagulation necrosis due to ligation of branches of the renal artery,

some workers claimed a rise in blood pressure, others none; (4) reduction of the amount of renal substance by partial renal excision and unilateral nephrectomy combined with coagulation necrosis of part of the remaining kidney by ligation of branches of the renal artery, all found increased blood pressure; (5) destruction of renal substance by irradiation of the kidney with X-ray produces moderate elevation; (6) renal infarction due to multiple emboli produces no rise; (7) occlusion of one main renal artery or its branches produces a slight temporary rise; (8) occlusion of both main renal arteries, one worker said there was a moderate to severe rise and one reported there was no rise; (9a) occlusion of renal arteries, veins, and ureters permanently produces no rise; (9b) intermittent by every two or three days there was a moderately persistent elevation (Loersch, 1933); (10) passive hyperemia (constriction of renal vein) of one kidney, the results were variable; (11) compression of the kidneys by Oncometer produced slight elevation; (12) permanent obstruction of both ureters produced moderate elevation; (13) temporary obstruction of one ureter followed by release of this obstruction and excision of the other kidney produced moderate elevation.

In addition to the facts which have been developed on the mechanism of experimental renal hypertension remarkable results have been accomplished in the reduction of blood pressure by means of extracts from kidneys not only by injection but also when the extract was given by mouth.^{28 29 30} This has also been used in humans with very satisfactory results in a limited number of cases. Page, for example, describes several cases of a most severe nature in whom amazing improvement was produced. Over-dosage of this extract, however, may result fatally and is, therefore, being used with great caution in humans.

Thus it can be seen that great strides are being made in the mysteries of hypertension and yet it is obvious that the door is just beginning to open. Even those who have done most work on these substances generated by the ischemic kidney do not contend that all essential hypertension is related to these pressor

substances. Other factors in the cause of hypertension must be kept in mind. The main theories concern the nervous system (especially disturbances of the sympathetic but also central influences such as possible disturbances of the diencephalon, thalamus, etc.^{31 32 33}

The day appears to be not very far distant before the term, "essential hypertension," will be eliminated and all types of hypertension will be considered secondary. Certain causes of hypertension which are already known to us and are fairly easily corrected should be kept constantly in mind even though some are quite rare. These are: (1) ptosis of one kidney producing obstruction of the flow of urine,³⁴ or (2) tortion, kinking, or compression of the renal artery; (3) kidney tumor; (4) kidney injury; (5) hydronephrosis and pyelonephritis;⁶ (6) chromaffin cell tumors of the suprarenal which might be suspected from careful pyelograms of the kidneys (and history of severe attacks of paroxysmal hypertension of short duration, dizziness, shortness of breath, pounding of the heart, substernal pain, nausea, vomiting, and sweating). One hundred and three cases have been collected from the literature.³⁵ A complete cure is possible with surgery.

Attempts to relieve hypertension through the sympathetic system (sympathectomy) have not been very gratifying. Cases must be selected with great care and all possibility of kidney disease eliminated as far as possible (sympathectomy in experimental hypertension does not reduce the pressure³⁶.) Cases most likely to be successful are considered those of a highly labile type and practically normal eye grounds, that is, very few arteriosclerotic changes. The cost of such major surgery will also limit this method. The results of this operation in two hundred and twenty-four cases reported by Adson of the Mayo Clinic³⁷ showed good results in only thirteen per cent, fair results in forty-one per cent, temporary benefit in thirty-nine per cent, and poor results in thirty per cent. As pointed out by Adson, however, the result might be considered excellent if these figures concerned the result of the treatment of cancer.

Extracts of kidney are not available for the

treatment of hypertension as yet. Everyone is agreed that the present day treatment is not satisfactory. Regulation of weight, an improved routine of living and relaxing, reassurance, psychotherapy, estrogenic substances in menopausal cases, and sedatives all find a useful place in prolonging and making more comfortable the lives of these patients. The usual course, however, progresses toward invalidism or a more rapid downward path. Any method which will delay this unfavorable progress is certainly worth while until more satisfactory means are devised and even if these methods require great effort and inconvenience.

For a number of years the writer has refused to use thiocyanate because it has been condemned in the past. In spite of an editorial in the *Journal of the Amer. Med. Assoc.* as recently as June 15, 1940 condemning this drug,³⁸ a review of the literature and personal communications show that outstanding clinics and physicians especially interested in hypertension are using it with great satisfaction until some better method is found.^{39 40 41 42 43 44 45} Now that simple methods of determining the blood level* are easily available to anyone, this method of treatment can no longer be considered dangerous if properly used. Just how it functions is unknown but that it does work and does improve the patient can hardly be questioned if one reviews the great number of reports in the literature today. In spite of this, many physicians are still advising patients not to take it and many more are giving it without selecting the patients and without the close observation of the blood level.

Seventeen cases are presented here. All were carefully selected especially noting the intelligence and cooperation of the patient as well as evidence of uremia. All other complications seemed to fare well with it though, of course, it would not be given to one with heart failure or any acute complication. The fact that they have had complications such as cerebral hemorrhage, hemorrhage into the eyes, etc., seems all the more reason for giving it to protect them from a subsequent accident. All of this series had repeated complete physical examinations, including basal metabolisms, electrocardiograms, fluoroscopic examinations of the heart and

chest. Repeated observations of the blood pressure were always made, ranging from one week to approximately one year. The blood pressure who reduced in all except one, who had very far advanced disease with arteriosclerosis and considerable kidney impairment. After a short trial in which she did not feel improved, the drug was discontinued. All others at some time during the treatment expressed themselves as feeling much better, though several others wished to discontinue the medicine after a time because of the development of other situations. Two developed rather severe muscular weakness and one had some diarrhea about one week after beginning the treatment. Another one developed an acneform type of rash. One began to develop a mental disturbance and the drug was promptly discontinued, though it probably had nothing to do with the mental upset as she had had two previous and similar attacks during the past ten years and before she had ever taken this drug. All others are well satisfied with the effect of the medicine and from a clinical viewpoint it seems much less likely that they will have an accident as a result of their disease. All cases must also be considered severe. The mild and moderate classes are not subjected to it. Furthermore, it is not considered feasible as a part of the treatment in a hospital staff service because this treatment is a long-term arrangement and should be administered by one physician who can maintain a constant interest in the patient. One should not expect immediate and dramatic effect from it. At times improvement will not be noted within two weeks and then a very satisfactory change will take place.

We usually begin the treatment here in uncomplicated cases with three grains of potassium thiocyanate three times a day for the first week. During the latter part of this week a blood determination is made and a reduction in the dosage is usually advised. The dosage usually settles then to six grains one day and three the next or sometimes only three grains per day is necessary. A blood level of six milligrams percent seems most satisfactory here, though it is agreed that much higher levels may be allowed. The patients are repeatedly warned that they must return for regular de-

terminations, that they must take the exact amount prescribed, and they must not fail to take it regularly. Of course, the drug would not be given to anyone shortly after the onset of a complication but those who have had hemorrhage in the past are treated and somewhat more cautiously, that is, the dosage to begin with is usually smaller. Though all these cases undoubtedly are very severe, no one has suffered any catastrophe yet (one year). They seem to feel much less nervous. Occasionally they say they do not have quite as much energy as formerly, which is probably a very good thing.

Potassium thiocyanate is not a new drug. Apparently its first use was reported by Claude Bernard in 1857 in Paris.⁴⁷ It was given principally for nervousness. How he arrived at its use is not disclosed. It is generally agreed that it never breaks down into the much more deadly cyanide. It occurs normally in small quantities in saliva and certain other secretions of the body. It has been estimated that fifteen grams (232 grains) might cause death in a human⁴⁸ but it is probable that more would be required. If this drug is used with any reasonable care there is no real danger.

In order to understand the sensation derived from this drug, the writer took nine grains per day for one week with careful observation of the blood pressure (morning and afternoon) and blood level each day. Before this experiment was begun a complete physical examination, including electrocardiogram, basal metabolism test, etc., was done. The blood pressure was taken repeatedly over a period of two days and there was very little variation. The readings were always between 120/70 and 130/80. Practically no reduction of blood pressure was noted while taking the drug until the seventh day when there was a transient decline of the systolic pressure of about ten points. The blood pressure on the seventh day was taken almost every hour and varied between 110/70 and 120/80. The blood level determination did not disclose an elevation of the blood level during that time. Only one reference can be found in the literature where thiocyanate was given to normals.⁴⁹ The writer observed a definite decrease in their

blood pressures but he gave larger doses than are usually given here and he did not record the blood levels. Nine grains per day in my series produced an elevation of the blood level to more than six milligrams percent in one week.

SUMMARY

The present advances in the relationship of the kidney to hypertension are reviewed. The effect of this on surgical judgment regarding the kidneys is discussed. The use of thiocyanate is described and seventeen selected cases are presented. The effect of this drug on the author is described.

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Dr. Robert B. Stith, Jr., formerly of Florence, is now located at Fort Bragg, North Carolina, where he is a Captain in the United States Army Medical Corps.

Dr. James Graham Shaw of Columbia, has been promoted to a Captain in the Medical Corps of the U. S. Army. Dr. Shaw is the son of Dr. and Mrs. A. E. Shaw of Columbia.

Dr. Henry E. Plenge, a graduate of the Medical College of the State of South Carolina, 1938, now Senior Resident in Radiology at Baylor University Hospital, Dallas, Texas, is planning to return to South Carolina in July.

Dr. George D. Johnson of Spartanburg, has been elected President of the County Medical

Society to fill the term of Dr. D. L. Smith, Jr., now in Service.

Captain William T. Barron, formerly of Columbia and now of Fort Jackson, has been promoted to the office of Major.

News of The Medical College

Dr. Tinsley R. Harrison, Professor of Medicine at Wake Forest University, gave the second annual Marion Sims Lecture on April 17.

The following members of the faculty have been called to duty with the armed forces: Dr. M. E. Cox, Pathology; Dr. Pierre C. Jenkins, Otolaryngology; and Dr. Rhett Harris, Bacteriology.

An Open Letter Concerning the Marriage Certificate Bill

(During the 1942 session of the S. C. General Assembly the so-called Marriage Certificate Bill was introduced. The bill was not adopted but there are indications that this or a similar bill will be presented again next year.

In view of this, we are glad to print the following open letter, written by Dr. J. W. Jervcy of Greenville, which appeared in certain newspapers in the state. We believe that many if not most of the members of the Association will agree with Dr. Jervcy's clear and logical appraisal of the matter under discussion.

Dr. Jervcy is a past president of the S. C. Medical Association and of the Southern Medical Association.—Editor.)

MARRIAGE CERTIFICATE BILL.

Editor The News:

As a matter of public interest and education in the subject treated below may I ask you to give space in your valuable columns to the following letter to an esteemed representative in the South Carolina legislature? He is one of the most intelligent and outstanding members of that body.

"I have only seen today about the bill in the legislature requiring medical certification before issuing a marriage certificate, and that it has passed second reading, you being the proponent or leader of this legislation. I should have written to you before as a matter of public interest if I had known the matter was under consideration. I hope it is not too late to present a few facts to you which are perfectly well known to the intelligent practitioner of medicine, and concerning which there can be no reasonably intelligent denial. While apologizing for the necessary length of this letter I sincerely hope you will take sufficient time off to read it carefully and that you will realize you are doing society a very poor service by pressing for this bill's adoption.

"The truth of the matter is, of course, that such an examination and certification would be nothing more or less than a farce, and would be an utterly false guarantee of safety. The medical profession knows that while a large number, admitting even the majority, of positive syphilis can be demonstrated, there

are a large number of others which cannot be demonstrated, except over long periods of time and study, which no competent medical man is going to undertake for a nominal fee, and which it is unfair to require of candidates for matrimony. These cases are not possible of transmission by direct contact, though of course, it is quite possible their stamp may be implanted upon the next generation. We know that other conditions beside syphilis will provoke a positive blood test, for example, Vincent's angina. We also know that there exists a large number of Wassermann-fast cases, which are in no way capable of transmitting the disease. We also know that there are large numbers of central nervous cases which will only show positive reaction when a test is made of the spinal fluid at repeated intervals. All of these facts show the futility of trying to control this social disease by the means suggested in the bill.

"Virtually the same is true of the gonococcus infection. While the clinical symptoms of this disease are usually clear, yet it is true that the microorganism which is the active cause cannot be distinguished from several other diplococci under the microscope, for instance micrococcus catarrhalis, or micrococcus meningitidis, which explains why no court of law would accept as positive a bacteriologist's plain statement that his microscopical findings are positive.

"As a rule it is only in the earlier stages that syphilis is communicable, but the Wassermann reaction persists always for a long time in untreated cases. It would seem only reasonable, therefore, that if legislation on this subject must be enacted it should be directed toward some sort of guarantee on the part of the patient that he or she will undergo proper treatment, rather than a refusal to allow a marriage license. But, in my opinion, even this would be futile or at least impracticable.

"The suggestion that at least 33 1-3 per cent of negroes have venereal disease is ultra-

conservative. There are no positive statistics available, but some years ago I directed a questionnaire to leading physicians and specialists of the South. The lowest estimate was 50 per cent and the highest well over 75 per cent. Many of these are active, but also many inactive and not communicable.

"What these figures do suggest, however, is the importance of ascertaining whether or not active disease is present in those employed as servants. Here, too, legislation would hardly be of possible practical application. Results here, also, are best achieved by education—and in this case education of employers, teaching them to require evidence of freedom from active venereal disease before employing negro servants.

"Negroes seem to have acquired a certain amount of immunity from the bad effects of venereal disease, so it is the white race that is most in need of protection. As there is no such thing as legal miscegenation the practical thing to guard against is actively infected servants, especially where they come into contact with children.

"It is not possible by legislation to change the forces of human nature. If people are denied the right of marriage, for whatever reason, then illegitimacy will be greatly increased to the inevitable detriment of civilized society. What happened when people were denied the use of alcoholic beverages? They got them anyhow and to the great demoralization of our social structure. Prohibition had to be repealed, and it was a costly experiment when the damage to the fabric of our society is considered.

"I have no doubt that it might be well to refuse marriage licenses to any applicant with an active urethral discharge or a supposed chancre or suspicious sore, not because it is necessarily a Neisser or a spirochete infection, but only because it is potentially so.

"Senator Laney's question in a previous consideration of a similar bill, as to why examination should not be required for pulmonary tuberculosis is vastly more to the point of protecting those desiring marriage and could be much more easily proved. Tuberculosis often cannot be detected by casual examination in

the early stages, and per contra, many a person has lived a long and useful life with a presumably competent diagnosis of tuberculosis, who were really victims of bronchiectasis, disease of the bronchial glands, having no tuberculosis at all, and carrying no danger whatever of contagion. See what glaring inconsistencies and injustices this bill carries. I bespeak your particularly intelligent judgment in this matter, so important to many individuals and also to the people—the state.

"It is ridiculous for anyone to make the statement that social disease could be eliminated by the manner proposed in this bill. Just what the answer is, is perhaps a little difficult to determine, but it seems more reasonable to suppose that intensive teaching of the people, with constant reiteration, and urging of early medical attention in such cases would be vastly more productive toward the desideratum of elimination than any legislative act could possibly be.

"It is merely another version of the old and well-known fact that the morals of the people, and the results of immorality cannot be cured by legislation. Teaching seems to be the only answer.

"Briefly it may all be summed up to the effect that it is very frequently possible for a physician to certify to the existence of active venereal disease in a patient, but it is utterly impossible for any physician in any reasonable time, such as is contemplated in this bill, to certify that any given patient is not a victim of venereal disease.

"Sincerely yours,

J. W. JERVEY, M.D."

Following is the legislative reply:

"I enjoyed reading your very interesting letter.

"Of course, everything that you say is correct, but I feel that some step should be taken to eliminate the marriage racket in this state. I realize, of course, that the proposed bill has certain defects but I consider it a piece of constructive legislation and intend to continue to exert myself for its passage."

Comment seems unnecessary.

J. W. JERVEY, M.D.
Greenville.



*Dr. George M. Truluck, Orangeburg, S. C.,
President South Carolina Medical Association*



*Dr. T. A. Pats, Columbia, S. C.
President-Elect S. C. Medical Association*

THE JOURNAL

OF THE

South Carolina Medical Association

Julian P. Price

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Original manuscripts, subject to approval by the Editor and the Editorial Board, are desired for publication in the Journal. They should be typewritten, double spaced, on 8½ x 11 paper. References should be complete, and only such as relate directly to statements quoted in the paper. Illustrations will be used as funds permit, or as authors are willing to bear the necessary increase in cost. Short original articles are preferred to long reviews.

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MAY, 1942

THE ANNUAL MEETING

Elsewhere in the Journal is presented a program of the Annual Meeting to be held in Columbia, May 19 to 21.

Much effort has been expended on the preparation of this program and it promises to be one of the most stimulating and instructive meetings which the Medical Association has ever had. Well balanced, it offers attractions at every session which no member of the Association can well afford to miss. Furthermore, the physicians of Columbia are famous for their hospitality and they have no intention of lowering their standards this year.

Arrive early and stay until the end—it the best advice we can give to the readers of this Journal.

WHAT SHALL I DO?

"What shall I do?" is the question which every patriotic physician is asking himself today as he hears the call of the army for more physicians.

Who are we that we should assume the role of a Delphian oracle and tell any man what he should do or should not do. All we dare is to suggest, and these are our suggestions:

For the physician who is under 36 years of age, whose services cannot be considered as essential to the medical welfare of his community or to the organization with which he is connected—go to the Medical Recruiting Board in Columbia and volunteer.

For the physician under 36, whose services are essential to the welfare of his community—volunteer your services through the Procurement and Assignment Service in Washington and then, if possible, arrange for some older man or some woman to take over your work.

For the physician between 36 and 45—volunteer your services through the Procurement and Assignment Service, but do not expect to be called unless you are a specialist or unless the need grows greater than it appears at the present time.

For the physician over 45—take off your coat, hang it in your own office, roll up your sleeves, and get ready to tackle the biggest practice you have ever had.

And finally, for all physicians—if it appears as though you will be called into service, do not make final plans to close your office or to turn over your work to another unless you are reasonably certain that you can pass the rigid physical examination which will be required of you.

Report of Treasurer

Balance Sheet
December 31, 1941

ASSETS

Guaranty Bank & Trust Co.	\$1,742.14
Petty Cash	10.00
Accounts Receivable	1,058.41
Deposits Receivable	3.00
Investments	
Defense Bonds	\$3,000.00
Peoples Federal Building & Loan	500.00
Total Investments	3,500.00
Office Furniture & Fixtures	1,100.00
Total Assets	<u>\$7,413.55</u>

LIABILITIES

Social Security	\$ 6.75
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SURPLUS

Surplus, Balance	\$6,794.89
Excess Revenue Over Expense	611.91
Total Surplus	<u>\$7,406.80</u>
Total Liabilities and Surplus	<u>\$7,413.55</u>

We have examined the Treasurer's records of the South Carolina Medical Association for the year ended December 31, 1941.

We certify that, in our opinion the above balance sheet and accompanying statement of income and expense of the South Carolina Medical Association, sets forth the financial condition of the Association at December 31, 1941, and its income and expense for the year ended on that date.

JAILLETTE & OULLA, Public Accountants

Statement of Revenue and Expense

For Period

January 1, 1941 - December 31, 1941

Income:		Medical Preparedness	395.95
Membership Dues	\$2,595.50	Office Expense	210.89
Subscription Dues	2,607.50	Printing	2,975.00
Advertising	3,088.52	Rent	299.05
Interest Earned	192.50	Salary, Secretary-Editor,	
Cuts for Journal	35.72	Dr. E. A. Hines	768.82
Books	10.00	Salary, Secretary-Editor,	
Miscellaneous	4.35	Dr. J. P. Price	1,487.50
Total Income	<u>\$8,534.09</u>	Salary, Stenographer	663.00
		Postage	117.00
Expense:		Taxes and License	63.08
Audit	\$ 75.00	Telephone	115.87
Convention Expense	302.03	Traveling Expense	96.40
Dues & Subscriptions	30.50	Bank Charges	.90
Expense, Secretary		Books	22.15
— Editor	160.77	Legislative Committee	30.00
Express & Drayage	60.00	Total Expense	<u>\$7,922.18</u>
Heat, Light, Fuel & Water	17.98	Excess of Revenue	
Insurance	22.29	Over Expense	<u>\$ 611.91</u>

JULIAN P. PRICE, Treasurer
S. C. Medical Association.

SOCIETY REPORTS

Medical Society of South Carolina (Charleston). On March 24 Dr. Henry W. deSaussure presented a preliminary report on the Maternal Welfare Clinic of Roper Hospital. Dr. R. W. Hanckel, Jr., read a paper on Peroral Endoscopy.

On April 7th a special meeting was held in conjunction with the Medical College in the Simon Baruch Memorial Auditorium to view a technicolor film on Sex Hormone presented by Dr. D. K. Kitchen, Chief Endocrinologist of the Parke-Davis Laboratories.

Oconee County Society. Dr. Allen C. Bradham of Anderson presented a paper on Non-Specific Prostatitis.

Columbia Medical Society. Dr. Philip M. Stimson, Associate Professor of Clinical Pediatrics, Cornell University Medical College, discussed Poliomyelitis with particular reference to the Sister Kenny treatment. A large number of visitors which included most of the pediatricians in the state were present.

Chester County Society. The Chester County Medical Society held its monthly meeting Tuesday night, April 7th, at the Pryor Hospital. Dr. Wallace made a ten minute talk on Emboli With Pulmonary Infarction using a case history, diagrammatic drawing by Mrs. Wallace and X-rays. Dr. J. N. Gaston, Jr., commented on the talk and told of an interesting case of his. Later Dr. V. P. Patterson told of a similar case in one of his patients.

The guest speaker was Dr. James A. Hayne, our State Health Officer since 1911. Dr. Hayne made a very interesting and impressive talk on The Danger of New Epidemics in the United States. He told how the greatly increased rate of travel by plane from Brazil to the coast of Florida makes possible a widespread devastating epidemic

of Yellow Fever by the *Aedes Aegypti* mosquito. In fact, fifty-seven people were vaccinated against Yellow Fever at the District Public Health Meeting in Spartanburg on April 7th.

Dr. Hayne stressed the real urgency of vaccinating against smallpox and diphtheria and typhoid fever all children who had not previously been immunized against these diseases.

Aside from combating epidemics, Dr. Hayne stated that the 400 Health Officers, Sanitary Officers, and Nurses of the State Board of Health would all be on instant call to duty at any point in the State in case of any war emergency such as a bombing attack, fire, etc.

Marion County Society. A meeting of the Marion County Medical Society was held at the Marion Hotel on April 13th. Officers for 1942 were elected as follows: Dr. Donald Michie, President; Dr. E. M. Dibble, Secretary-Treasurer; and Dr. H. S. Gilmore was elected delegate to the annual meeting.

Coastal Medical Society. The Coastal Medical Society met at Beaufort on April 16. Lt.-Com. J. J. Short, Chief of Medicine, United States Naval Hospital, Parris Island, presented a paper on Clinical Aspects and Management of Obesity. Lt. W. H. Cleveland, Assistant Surgeon, Parris Island, S. C., discussed the Modern Treatment of Burns.

Greenville County Medical Society. On March 26th over one hundred physicians which included forty visitors heard an outstanding address by Dr. Paul White of Boston, on Heart Disease in Wartime. Dr. W. L. Pressly of Due West, spoke concerning the Procurement and Assignment Service and Dr. I. H. Grimball gave a report concerning Greenville physicians in the Service.

Anderson County Society. Dr. L. F. Hall of the South Carolina State Hospital for Tuberculosis, presented a paper on Early Diagnosis of Tuberculosis. Dr. W. L. Pressly of Due West, discussed the Procurement and Assignment Service.

DEATHS

Dr. Baylis H. Earle, 72, widely known physician, died at his home in Greenville on April 1st. A native of Anderson, Dr. Earle graduated from the Medical College of the State of South Carolina in 1892 and had made his home in Greenville for many years where he was connected with the U. S. Public Health Service.

Dr. Wilbur Curtis Hunsucker, 31, died suddenly at his home in Bennettsville on April 1st. Born in Marlboro County, Dr. Hunsucker was graduated from the Medical College of the State of South Carolina in 1934. Following his internship and residency in surgery at the Roper Hospital in Charleston, he moved to Bennettsville in 1937 where he was associated with Dr. Douglas Jennings of that city. Dr. Hunsucker is survived by his widow and two children.

Dr. F. H. Sanders, 49, died suddenly in Spartanburg on April 3rd. A native of Bowersville, Georgia, and a graduate of Emory University School of Medicine, Dr. Sanders located in Spartanburg in 1925 where he practiced till the time of his death. He is survived by his wife and one daughter.

News has been received of the death of Dr. David Peek, of Six Mile, S. C. A graduate of Emory University School of Medicine, Dr. Peek had practiced medicine for over twenty years. At the time of his passing he was the only physician in his community and his passing will leave a gap which will be hard to fill.

Dr. J. A. Martin, 83, retired, died at his home in Cowpens, April 19.

Dr. Martin had practiced medicine in this community for over forty years before age caused his retirement. A native of Spartanburg County he was graduated from Wofford College and from the Medical College of the State of South Carolina. He is survived by his wife, three daughters and two sons, one of whom is Dr. A. T. Martin of Cowpens.



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NEWS ITEMS

Dr. W. L. A. Wellbrock of Charleston, who has been stationed at the U. S. Naval Hospital, Quantico, Va., was recently at home for a few days. He expected to be transferred to foreign duty in the near future.

Dr. James H. (Shorty) Pearce, who was recently released from the Navy, has opened an office in Florence for general practice.

Dr. Edmond D. Wells, a graduate of the University of Louisville, Ky., recently came to Chester to take over the eye, ear, nose, and throat work of Dr. J. P. Young who has retired.

Dr. F. S. Chance, formerly of Chester, has been called to duty in the U. S. Navy and is now stationed at the Charleston Navy Yard.

Drs. R. M. Pollitzer and I. H. Grimball of Greenville, attended the Georgia Pediatric Society meeting held in Atlanta.

Dr. and Mrs. V. M. Brabham have moved from Kingstree to Orangeburg where Dr. Brabham will be connected with the Tri-County Hospital.

Since publication of the Office of Civilian Defense handbooks, "First Aid in the Prevention and Treatment of Chemical Casualties" and "Protection Against Gas," further experience has shown that the 2% solution of hydrogen peroxide recommended for the treatment of eyes following Lewisite burns may be injurious if used undiluted. The Chemical Warfare Service now recommends a single instillation in the eyes of a 0.5% solution of hydrogen peroxide as soon as possible after contamination with Lewisite. This solution may be prepared by diluting one part of a 2% solution with three parts of water, or one part of a 3% solution with five parts of water. The solution usually found in drugstores is the

U. S. P. strength of 2.5 to 3.5 per cent hydrogen peroxide. A 0.5% solution of potassium permanganate has also been found effective as an eye instillation following exposure to Lewisite.

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**PROPOSED REVISION
OF THE
CONSTITUTION AND BY-LAWS
OF THE
SOUTH CAROLINA MEDICAL ASSOCIATION**

(The last revision of the Constitution and By-Laws of the South Carolina Medical Association was made in 1913. Since that time amendments have been adopted and suggestions have been made for changes to improve the Constitution. With this in mind, the Council in April, 1941, appointed a committee of three, composed of the Secretary, the Chairman of Council, and the President-Elect, to draft a revision and to present it to the House of Delegates at the annual session in 1942. The Committee has met and will submit the following revised Constitution and By-Laws to the House of Delegates when they meet in Columbia on May 19, 1942. All members of the Association and particularly all delegates are asked to read this carefully).

CONSTITUTION

Article I. NAME OF THE ASSOCIATION

The name and title of this organization shall be the South Carolina Medical Association, Incorporated.

Article II. PURPOSES OF THE ASSOCIATION

The purposes of this Association shall be to federate and bring into one compact organization the entire medical profession of the State of South Carolina, and to unite with similar Associations in other States to form the American Medical Association; to extend medical knowledge and advance medical science; to elevate the standard of medical education, and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of medical care, so that the profession shall become more capable and honorable within itself, and more useful to the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

Article III. COMPONENT SOCIETIES

Component Societies shall consist of those county medical societies which hold charters from this Association.

Article IV. COMPOSITION OF THE ASSOCIATION

This Association shall consist of Members, Honorary Fellows, Honorary Members, and Guests.

Article V. HOUSE OF DELEGATES

The House of Delegates shall be the legislative body of the Association and shall consist of: (1) Delegates elected by the component county societies; (2) the Councilors; (3) the President, the President-Elect, the Vice-President, and the Secretary of the Association; (4) all Past-Presidents of the Association whose legal residence is in South Carolina; (5) the Chairman of the Executive Committee of the State Board of Health; and (6) the Chairman of the State Board of Medical Examiners.

Article VI. COUNCIL

The Council shall consist of the Councilors, and the President, the Vice-President, the President-Elect, and the Secretary of the Association. Besides its duties outlined in the By-Laws, it shall constitute the Finance Committee of the House of Delegates. Five councilors shall constitute a quorum.

Article VII. SECTION AND DISTRICT SOCIETIES

The House of Delegates may provide for a division of the scientific work of the Association into appropriate Sections and for the organization of such Councilor District Societies as will promote the best interests of the profession, such societies to be composed exclusively of members of component county societies.

Article VIII. SESSIONS AND MEETINGS

The Association shall hold an Annual Session during which there shall be held daily General Meetings, which shall be open to all registered members and guests. The place for holding each Annual Session shall be fixed by the House of Delegates. The time for holding the meeting shall be fixed by the Council.

Article IX. OFFICERS

Section 1. The officers of this Association shall be a President, a President-Elect, a Vice-President, a Secretary, a Treasurer, and eight Councilors.

Section 2. The officers, except the Councilors, shall be elected annually. The terms of the Councilors shall be for two years, but no Councilor shall serve for more than eight consecutive years. All these officers shall serve until their successors are elected and installed.

Section 3. The officers of this Association shall be elected by the House of Delegates on the first day of the Annual meeting of the House of Delegates.

gates. No person shall be elected to any office named in the preceding section who has not been in attendance at one of the last two Annual Meetings of the Association.

Article X. FUNDS AND EXPENSES

Funds shall be raised by the payment of dues by each member of the Association. The amount of the annual dues shall be fixed by the House of Delegates. A change in the amount of annual dues shall not be made except on a two-thirds vote of the Delegates present. Funds may also be raised by voluntary contributions, from the Association's publications and in any other manner approved by the Council. Funds may be appropriated by the House of Delegates to defray the expenses of the Association, for publications, and for such other purposes as will promote the welfare of the profession, but all resolutions appropriating funds must be referred to the Council before action is taken thereon.

Article XI. REFERENDUM

Section 1. A General Meeting of the Association may, by a two-thirds vote of the members present, order a general referendum upon any question pending before the House of Delegates, and when so ordered the House of Delegates shall submit such question to the members of the Association, who may vote by mail or in person, and if the members voting shall comprise a majority of all the members of the Association, a majority of such vote shall determine the question and be binding upon the House of Delegates.

Section 2. The House of Delegates may, by a two-thirds vote of its own members, submit any question before it to a general referendum, as provided in the preceding section, and the result shall be binding upon the House of Delegates.

Article XII. THE SEAL

The Association shall have a common Seal, with power to break, change or renew the same at pleasure.

Article XIII. AMENDMENTS

The House of Delegates may amend any article of this Constitution by a two-thirds vote of the Delegates present at any Annual Session, provided that such amendment shall have been presented in open meeting at the previous Annual Session and that it shall have been sent officially to each component county society at least two months before the session at which final action is to be taken.

BY-LAWS

Chapter I. MEMBERSHIP

Section 1. Any physician who is a member in good standing of a component society and who has

paid his annual dues to the Association is a member of the Association.

Section 2. Any person who is under suspension or expulsion from a component society, or whose name has been dropped from its roll of members, shall not be entitled to any of the rights or benefits of this Association, nor shall he be permitted to take any part in any of its proceedings until he has been relieved of such disability.

Section 3. Each member in attendance at the Annual Session shall enter his name on the registration book, indicating the component society of which he is a member. When his right to membership has been verified by reference to the roster of his society and it has been shown that he has paid his annual dues, he shall receive a badge which shall be evidence of his right to all the privileges of membership at that session. No member shall take part in any of the proceedings of an Annual Session until he has complied with the provisions of this section.

Section 4. Any physician who has been a member in good standing for forty consecutive years shall become, automatically, an Honorary Fellow of the Association. Any physician who has been a member in good standing for twenty-five consecutive years shall, upon his retirement from active practice, be eligible to Honorary Fellowship in the Association, subject to a recommendation from his component society and upon approval of the Council.

Section 5. Honorary Members shall be elected by ballot, and three-fourths of the votes cast shall be necessary to constitute a choice. Distinguished medical men residing outside of the state, or such within the state who are not practicing physicians, shall alone be eligible for such position. They shall be exempt from all payment of dues and have all privileges of membership, except the right of voting or of holding office.

Section 6. Any distinguished physician, not a resident of this state but who is a member of his own State Association, may become a guest during any Annual Session upon invitation of the officers of this Association, and shall be accorded the privilege of participating in all of the scientific work of that Session.

Chapter II. SPECIAL SESSIONS OF THE ASSOCIATION

Section 1. Special sessions of either the Association or of the House of Delegates shall be called by the President on petition of the Council, of ten Delegates, or of twenty-five members.

Chapter III. GENERAL MEETINGS

Section 1. All registered members may attend and participate in the proceedings and discussions of the General Meetings and of the Sections. The General Meetings shall be presided over by the President or by the Vice President, and before them shall be heard the address of the President and such

scientific papers and discussions as may be arranged for in the program.

Section 2. The General Meeting may recommend to the House of Delegates the appointment of committees or commissioners for scientific investigation of special interest and importance to the profession and public.

Chapter IV. HOUSE OF DELEGATES

Section 1. The House of Delegates shall meet on the day before that fixed as the first day of the Annual Session and shall complete all the regular business, including the election of officers, before the opening session of the General Meeting.

Section 2. Each component society shall be entitled to send one delegate to the House of Delegates each year, and those societies which have more than twenty members shall be entitled to one delegate for every twenty members and one for each fraction thereof.

Section 3. Twenty-five delegates shall constitute a quorum.

Section 4. It shall, through its officers, Council and otherwise, give diligent attention to and foster the work and spirit of the Association.

Section 5. It shall consider and advise as to the material interests of the profession, and of the public in those important matters wherein it is dependent upon the profession, and shall use its influence to secure and enforce all proper medical and public health legislation.

Section 6. It shall encourage post-graduate and research work, as well as home study.

Section 7. It shall hear the reports of the President, the Secretary, the Treasurer, the Council, and of Standing and Special Committees and shall act upon such recommendations or resolutions as may be submitted.

Section 8. It shall have authority to appoint committees for special purposes from among the members of the Association who are not members of the House of Delegates. Such committees shall report to the House of Delegates and may be present and participate in the debate thereon.

Section 9. It shall approve all memorials and resolutions issued in the name of the Association before the same shall become effective.

Section 10. It shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and By-Laws of that body.

Section 11. It shall nominate members for the Executive Committee of the State Board of Health, for the State Board of Medical Examiners, and for the State Board of Registration and Examination of Nurses, in accordance with the law in force in the State of South Carolina.

Chapter V. ELECTION OF OFFICERS

Section 1. All elections shall be by ballot and a majority of the votes shall be necessary to elect.

Section 2. Any person known to have solicited votes for or sought any office within the gift of this Association shall be ineligible for any office for two years.

Chapter VI. DUTIES OF OFFICERS

Section 1. The President shall preside at all meetings of the Association and of the House of Delegates; shall appoint all committees not otherwise provided for; shall deliver an annual address at the Annual Session of the Association; and shall perform other such duties as custom and parliamentary usage may require. He shall be the real head of the profession of the State during his term of office and, as far as practicable, shall visit the various sections of the State and there meet with the Councilors and component societies in an effort to advance the work of the Association.

Section 2. The Vice President shall assist the President in the discharge of his duties, and shall succeed the President in office should the President die or leave the State.

Section 3. The President-Elect shall endeavor to visit as many of the component societies as possible and thus acquaint himself with the membership as well as with the work of the Association so that he will be better prepared to assume the office of President.

Section 4. The Secretary shall attend the General Meetings of the Association and of the House of Delegates and shall keep minutes of their respective proceedings. He shall be ex-officio Secretary of the Council. He shall be custodian of all record books and papers belonging to the Association, except such as properly belong to the Treasurer. He shall provide for the registration of the members and delegates at the Annual Session. He shall keep a card index register of all members of the Association and shall transmit a list of these members to the American Medical Association at stated intervals. He shall, so far as possible, keep an accurate list of all physicians in the State who are not members of the Association. He shall collect all dues from members of the Association and turn the same over to the Treasurer, and he shall notify members who are in arrears in their dues. He shall aid the Councilors in the organization and improvement of the county societies and in the extension of the power and usefulness of this Association. He shall conduct the official correspondence, notifying members of meetings, officers of their election, and committees of their appointment and duties. He shall employ such assistants as may be designated by the Council or the House of Delegates. He shall supply each component society with the necessary blanks for making their annual reports and shall keep an account of all members in such society who have paid their dues. Acting with the Committee on Scientific Work, he shall prepare and issue all programs. Acting with the Committee on Legislation

and Public Policy, he shall aid in the dissemination of information to the members of the Association concerning pending legislation. The amount of his salary shall be fixed by the Council. He shall make an annual report to the House of Delegates.

Section 5. The Treasurer shall give bond in the sum of \$1,000. He shall demand and receive all funds due the Association, together with bequests. He shall pay money out of the treasury in accordance with instructions from the Council, or House of Delegates. He shall submit his accounts to a certified accountant for an annual audit and he shall annually render an account of his doings and of the state of the funds in his hands to the House of Delegates and the Council. The amount of his salary shall be fixed by the Council.

Chapter VII. COUNCIL.

Section 1. The Council shall meet daily during the Annual Session and at such other times as necessity may require, subject to the call of the Chairman or on petition of three Councilors. It shall elect a Chairman, Vice-Chairman, and a Clerk, who in the absence of the Secretary of the Association, shall keep a record of its proceedings. It shall, through its Chairman, make an annual report to the House of Delegates. Five members shall constitute a quorum.

Section 2. The Council shall consider all questions involving the rights and standing of members, whether in relation to other members, to the component societies, or to this Association. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a component society, upon which an appeal is taken from the decision of an individual Councilor. An appeal from the decision of the Council may be taken to the House of Delegates.

Section 3. In sparsely settled sections it shall have authority to organize the physicians of two or more counties into societies, and these societies, when organized and chartered, shall be entitled to all rights and privileges provided for component societies until such counties shall be organized separately.

Section 4. The Council shall provide for and superintend the publication of the Journal of this Association and for such other publications as may be necessary. The Council shall appoint the Editor and such assistants as may be deemed necessary. The salary of the Editor shall be fixed by the Council.

Section 5. The Council shall receive the annual audit of the Treasurer and the report of the Secretary and of the Editor and other agents of the Association and shall present a statement of the same in its annual report to the House of Dele-

gates. At its annual meeting, the Council shall adopt a financial budget for the coming year.

Section 6. Between the regular meetings of the House of Delegates, the Council shall serve as the Executive Committee of the Association. In the event of a vacancy in the office of the Secretary or of the Treasurer, the Council shall fill the vacancy until the next annual election. In the event that the President and Vice President both die, or resign, or are removed from office, the Chairman of the Council shall assume the Presidency until the President-Elect is duly installed into office at the next Annual Session.

Section 7. Each Councilor shall be organizer, peacemaker, and censor for his district. He shall visit each component society in his district at least once a year for the purpose of inquiring into the condition of the profession, and for improving and increasing the zeal of the county societies and their members. Should there be any county in his district which does not have a county society, he shall endeavor to establish the same. He shall make an annual report of his work, and of the condition of each county in his district, at the annual meeting of the Council.

Chapter VIII. COMMITTEES

Section 1. The standing committees shall be as follows:

- A Committee on Scientific Work
- A Committee on Legislation and Public Policy
- A Committee on Public Health and Instruction
- A Committee on Medical Education
- A Memorial Committee

Section 2. The Committee on Scientific Work shall consist of three members and the President and Secretary, ex-officio, and shall determine the character and scope of the scientific proceedings of the Association for each session, subject to the instructions of the House of Delegates or Council. Thirty days prior to each Annual Session it shall prepare and issue a program announcing the order in which papers and discussion shall be presented.

Section 3. The Committee on Legislation and Public Policy shall consist of three members and the President, President-Elect, and Secretary, ex-officio. It shall represent the Association in securing and enforcing legislation in the interest of the public health and of scientific medicine. It shall represent the Association in preventing the enactment of legislation which is inimical to the public health, to scientific medicine, or to established standards of medical training or of medical care. It shall keep in touch with professional and public opinion and shall make a careful study of such proposals and plans as are advanced which would bear directly or indirectly upon the practice of medicine and upon the public health (i. e., health insurance, hospital insurance, State or Federal aid in the care of the indigent, etc.) and shall advise the

House of Delegates, the officers of the Association, and the members of the Association concerning these matters. It shall make recommendations to the House of Delegates and the Council should the occasion arise.

Section 4. The Committee on Public Health and Instruction shall consist of five members, none of whom shall be in the employ of the State Board of Health. It shall study the broad field of public health and particularly the work of Public Health Agencies in state, federal, county and city organizations and shall formulate plans for the proper coordination of this work with that of the practicing physician. It shall be the duty of this committee to give to the public (through selected speakers and through the press) information relative to the public health.

Section 5. The Committee on Medical Education shall consist of five members and its duty shall be to formulate plans aimed toward the advancement of medical knowledge amongst the members of the Association.

Section 6. The Memorial Committee shall consist of three members and shall secure the names and relevant information of members of the Association who have died within a given year and shall present the names of these men, along with a fitting tribute, at the next Annual Session.

Section 7. The Committee on Arrangements shall be appointed by the component society in whose jurisdiction the next Annual Session is to be held. It shall be directly responsible for making all arrangements for the meetings, excepting that of the scientific program itself. Its Chairman shall report an outline of the arrangements to the Secretary for publication in the program.

Section 8. All Standing Committees shall be appointed by the President. These appointments shall be announced by the President within thirty days after he assumes office.

Section 9. Unless otherwise specified, the Chairman of each Standing Committee shall present a report at the Annual Meeting of the House of Delegates.

Section 10. Special Committees may be appointed by the President, subject to instructions from the Council or House of Delegates.

Chapter IX. COUNTY SOCIETIES

Section 1. All county societies now in affiliation with this Association or those which may hereafter be organized in this State, which have adopted principles of organization not in conflict with this Constitution and By-Laws, shall upon application, receive a charter from and become a component part of this Association.

Section 2. Charters shall be issued only upon approval of the House of Delegates and shall be signed by the President and Secretary of this Association. The House of Delegates shall have

authority to revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Section 3. Only one component medical society shall be chartered in any county.

Section 4. Each county society shall judge of the qualification of its members, but as such societies are the only portals to this Association and to the American Medical Association, every reputable and legally registered white physician whose work and conduct are of an ethical nature shall be eligible for membership.

Section 5. Any physician who may feel aggrieved by the action of the society of his county in refusing him membership or in suspending or expelling him, shall have the right of appeal to the Council and finally to the House of Delegates.

Section 6. When a member in good standing in a component society moves to another county in this State, his name, upon request, shall be transferred without cost to the roster of the county society into whose jurisdiction he moves.

Section 7. A physician living on or near a county line may hold his membership in that county most convenient for him to attend on permission of the component society in whose jurisdiction he resides.

Section 8. Each county society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county, and toward increasing the membership until it embraces every qualified white physician in the county.

Section 9. At some meeting in advance of the Annual Session each county society shall elect a delegate or delegates (as provided in Chapter 4, Section 2), and the Secretary of the society shall send the names of such delegates to the Secretary of the Association at least ten days before the Annual Session.

Section 10. The Secretary of each component society shall keep a record of its members, and a list of the non-affiliated registered physicians of the county. Each year he shall submit a list of all members and non-affiliated physicians to the Secretary of this Association at least thirty days before the Annual Session, together with the dues of all members.

Section 11. Any county society which fails to pay the dues of its members or to make the report required on or before April 1 of each year shall be held as not in good standing, and none of its delegates or members shall be permitted to participate in any of the business or proceedings of this Association or of the House of Delegates until such requirements have been met.

Section 12. The Secretary of the State Association shall be required to make diligent effort to collect annual dues directly from members of any county

society who may be reported as delinquent by the county secretary, or in the event of the county secretary failing to make report as required.

Chapter X. FINANCES

Section 1. The annual dues for members in this Association shall be \$6.00, of which \$3.00 shall be for a subscription to the Journal of the Association.

Section 2. The fiscal year for this Association shall run from January 1 to December 31.

Chapter XI. DISTRICTS

The counties of the State shall be divided into the following districts:

District 1. Charleston, Colleton, Jasper, Dorchester, Berkeley, Beaufort.

District 2. Edgefield, Aiken, Lexington, Richland, Saluda.

District 3. Laurens, Newberry, Greenwood, Abbeville, McCormick.

District 4. Anderson, Cherokee, Greenville, Oconee, Pickens, Spartanburg, Union.

District 5. Chester, Kershaw, Lancaster, York, Fairfield.

District 6. Florence, Darlington, Chesterfield, Marlboro, Dillon, Marion, Horry.

District 7. Clarendon, Georgetown, Lee, Sumter, Williamsburg.

District 8. Allendale, Bamberg, Barnwell, Calhoun, Hampton, Orangeburg.

Chapter XII. MISCELLANEOUS

Section 1. No address or paper before the Association, except those of the President and invited guests, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on any subject, except by special consent of the presiding officer.

Section 2. All papers read before the Association or any of the Sections shall become its property. Each paper shall be deposited with the Secretary when read.

Section 3. The deliberations of this Association shall be governed by parliamentary usage as contained in Roberts' Rules of Order, when not in conflict with the Constitution and By-Laws.

Section 4. The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members in their relation to each other and to the public.

Chapter XIII. AMENDMENTS

These By-Laws may be amended at any Annual Meeting of the House of Delegates by a two-thirds vote of the delegates present.

Burwell & Dunn Company

CHARLOTTE, N. C.

WHOLESALE DRUGGISTS

and

MANUFACTURING PHARMACISTS

ESTABLISHED IN 1887

Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 460

Dr. James O'Hear (presenting and conducting):

History: This 45 year old white man was in a minor automobile accident in which a car bumped into the rear of the truck he was driving. No appreciable damage to the truck and he sustained no type of physical injury. After the accident he drove through traffic in an apparently normal fashion, and about an hour later, when reporting the accident to the foreman of the company for which he worked, he suddenly began to shake, crumpled to the floor and was dead by the time he reached the hospital.

Past History: No history of heart disease or hypertension obtained from relatives. No serious illness.

Physical Examination: He was an excellently developed man. Slightly obese and about 6 feet 2 inches in height. There was no evidence of external injury. There was no peripheral edema or evidence of external lymphadenopathy. No discharge from the ears, nose or mouth. No icterus. No deformities or scars.

This case, as you have been told, is presented to provide a basis for a critical analysis and differential diagnosis of causes of sudden death.

I would like to say before we start that the students and I tried to find out what causes this kind of death, and found that Dr. Pratt-Thomas had removed all the articles from the library, so we will have to start from "scratch." (Laughter).

Mr. Price, do you have any ideas about how to go about this? What did the man die of?

Student Price: I believe the most common causes of such sudden deaths are to be found in the circulatory system. These conditions usually consist of some kind of occlusion in the heart and some sort of rupture in the brain. Within the brain rupture of a vessel because of arteriosclerosis and hypertension may be the cause, or in some instances the rupture of a congenital aneurysm of the Circle of Willis will produce sudden death. As a rule the hemorrhage must be very extensive or involve some of the vital centers, as would be the case in the pons or medulla, for death to ensue immediately.

Dr. O'Hear: What two vessels are often termed the "arteries of sudden death?"

Student Price: The anterior descending branch of the left coronary artery in the heart and the lenticulostriate artery in the brain.

Dr. O'Hear: What happens to these vessels to cause sudden death?

Student Price: Usually rupture of the lenticulostri-

ate artery and thrombosis of the coronary vessel on an arteriosclerotic basis.

Dr. O'Hear: Mr. Allison, does the fact that this person was a white man, 6 feet 2 inches in height, and slightly obese help you at all in deciding upon the cause of this man's death?

Student Allison: It tends to direct one's attention to the circulatory system.

Dr. O'Hear: Quite true. What sort of circulatory trouble would he be likely to have?

Student Allison: Hypertension with arteriosclerosis and resultant coronary or cerebral artery disease with hemorrhage or thrombosis.

Dr. O'Hear: We have nothing to indicate that he had any vascular disease or hypertension. What other cerebral pathology might account for it?

Student Allison: Delayed hemorrhage or progressive hematoma following trauma is a possibility.

Dr. O'Hear: We do not know anything about the possibility of any systemic disease that he might have had, but if such a disease was present, what external evidence might there be that would help in explaining this case?

Student Allison: Purpuric hemorrhages would be of value.

Dr. O'Hear: Purpura is a frequent terminal condition in what disease?

Student Allison: Leukemia.

Dr. O'Hear: Pathologist like to drag "red herrings" across our paths and try to throw us off the track. Do you think the statement "No lymphadenopathy" is a red herring or a hint? What type of leukosis is usually associated with lymphadenopathy?

Student Allison: Lymphatic.

Dr. O'Hear: Mr. Brunson, do you know of any other occurrence in the cranium that would explain this case?

Student Brunson: A tumor in one of the silent areas of the brain with sudden hemorrhage into its substance can produce sudden death. As regards thrombosis and embolism which have been previously mentioned the former is not usually associated with sudden death and for the process of embolism, you would expect to find some evidence of general systemic disease.

Dr. O'Hear: Where may the embolus come from?

Student Brunson: It may come from vegetations or mural thrombi in the heart, from atheromatous plaques or ulcers, or from the lungs. Emboli from the right side of the heart can reach the brain only if there is a patent foramen ovale or interventricular septal defect.

Dr. O'Hear: Mr. Burdette, what may have happened in this man's pulmonary system to produce this picture?

Student Burdette: A massive pulmonary embolism can produce practically instantaneous death, but there is usually an apparent focus or history of operation. There is no mention of thrombophlebitis of the lower extremities.

Dr. O'Hear: Is that all?

Student Burdette: The formation and rupture of an aneurysmal dilatation of a vessel within a cavity in the lung.

Dr. O'Hear: There is something more common than that. Mr. Erwin, can you help us out?

Student Erwin: Sudden complete pneumothorax could account for his death.

Dr. O'Hear: All right. Now, Mr. Guyton what else may have happened in this man's thoracic cavity?

Student Guyton: Rupture of a syphilitic aortic aneurysm with massive hemorrhage may have occurred. An enlarged heart with coronary atherosclerosis and old myocardial fibrosis may also have failed suddenly without any demonstrable new pathological changes. A heart weighing over 500 gms. can fail suddenly without warning.

Dr. O'Hear: Yes, that is perfectly true, no matter what the etiology of the hypertrophy may be. Mr. Herbert, can you add any other possibilities?

Student Herbert: Rupture of the ventricular wall on the basis of myocardial infarction which has produced weakening and aneurysmal dilatation can produce a dramatically sudden death. A massive hemopericardium can also result from a dissecting aneurysm of the aorta which ruptures into the pericardial sac.

Dr. O'Hear: Mr. Horger, can syphilitic cardiovascular disease cause sudden death?

Student Horger: Yes, this is a comparatively common cause of sudden death. The syphilitic aortitis produces marked narrowing of the mouths of the coronary arteries with impairment of the coronary circulation.

Dr. O'Hear: What about sudden death in syphilitic aortic insufficiency?

Student Horger: I wouldn't expect it, unless the mouths of the coronaries were also involved.

Dr. O'Hear: Mr. Marett, will you mention a few abdominal catastrophes that might explain his death?

Student Marett: Rupture of a gastric ulcer will occasionally cause sudden death. I think we can rule out ruptured tubal pregnancy here entirely (loud laughter).

Dr. O'Hear: I think we can rule out a ruptured gastric ulcer too, even though we have a very vague and incomplete history to go by.

Student Marett: I agree, but it was just one of the things to mention. Rupture of a vessel into one or both of the adrenal glands can produce death by sudden adrenal insufficiency. There also might be a rupture of various types of aneurysm in the abdominal cavity, just as have been mentioned for the

chest.

Dr. O'Hear: That's right. Do any members of the staff have anything to say?

Dr. Kelley: I would simply like to say that the chances are that this man died of coronary heart disease.

Dr. Pratt-Thomas: (demonstrating heart and aorta)—I think Dr. O'Hear and the students are to be congratulated for making such a complete discussion out of so little. The short comings of the protocol were recognized and this case was not presented to baffle you, and certainly was not given with the idea that anyone would make an accurate diagnosis. It was presented to stimulate you to inquire into the causes and mechanisms of sudden death and also because the underlying pathological changes in this case are interesting and unusual. Sudden death is an extremely interesting and often baffling subject which often cannot be adequately explained even after a thorough postmortem examination. It is a subject about which much has been recently written and often has important medico-legal aspects.

This man had a dissecting aneurysm of the aorta. Here you see that the dissection has separated the layers of the aorta, the adventitia and outer third of the media from the intima and inner two-thirds of the media, along its entire length involving the great vessels of the arch and the iliacs as well, so that they resemble two tubes instead of one. Here you see a horizontal tear in the intima and media measuring 4 cm. in length and lying from 1-2 to 1 1-2 cms. above the coronary ostia. The dissection has extended down behind the mouths of the coronary arteries, and this is the most unusual feature of the case, for the pressure of the blood accumulating between the aortic layers has so compressed the walls of the coronaries just distal to their mouths as to produce the effect of a bilateral coronary occlusion. The heart was definitely hypertrophied weighing 560 gms.

As regards the production of these dissecting aneurysms, whatever may be said is still subject to debate. This aorta shows advanced atherosclerosis and this may have been a factor. You have all heard of the idiopathic cystic medial necrosis and more recently other degenerative changes in the aortic media have been described. These are believed to be the basis for hemorrhage between the coats and eventual dissection. The intimal tears which usually accompany such dissections are now believed to be a result of the dissection and not the cause. Syphilis is not a cause of dissecting aneurysms and is believed to prevent their formation, although some dissecting aneurysms have been reported as occurring in the presence of syphilitic aortitis.

There is no evidence that trauma played any role in the case, although the strain and excitement might have caused an elevation in blood pressure which caused the dissection to occur at this time instead of at a later date.

WOMAN'S AUXILIARY

SOUTH CAROLINA MEDICAL ASSOCIATION

President
Mrs. Richard M. Pollitzer
Greenville, S. C.

Publicity Secretary
Mrs. W. H. Lyday
Greenville, S. C.

PROGRAM OF THE WOMAN'S AUXILIARY TO THE

South Carolina Medical Association
Columbia, S. C.

TUESDAY, MAY 19, 1942

8:00 p. m. Student Loan Fund Committee Meeting
Mrs. L. O. Mauldin, Chairman, Mrs. T. A. Pitts, Co-Chairman
8:45 p. m. Executive Board Meeting
Mrs. R. M. Pollitzer, President, presiding

WEDNESDAY, MAY 20, 1942

9:30 a. m. House of Delegates
11:30 a. m. Program Meeting
Guest Speaker: Mrs. A. F. McKissick,
State Chairman of South Carolina Council of National Defense
1:30 p. m. Luncheon
5:00 p. m. Tea

THURSDAY, MAY 21, 1942

10:30 a. m. Conducted Tour
Hostess: Auxiliary to the Richland County Medical Society

A MESSAGE FROM THE STATE PRESIDENT

The seventeenth Annual Convention of the South Carolina Medical Association will be held in Columbia, May 19-21, 1942. The Auxiliary of the Richland County Medical Society will be hostess. A cordial welcome awaits each doctor's wife.

If we may judge by the reports which have come in, members of the Auxiliary have been very active this year. In spite of the fact that many physicians have been sent to camps, we have 259 members on roll—a few more than last year.

It is gratifying to see how energetically our women have promoted health projects. Whenever called upon by the county medical society they have responded 100 percent. In Greenville, at the request of the medical society, a wide educational campaign was conducted for the control of cancer. More than 2,000 people

attended the seven meetings held, while many more heard the three radio broadcasts. After the campaign, seven local organizations applied to the auxiliary for speakers on cancer control.

Richland Auxiliary, at the request of the C. V. S. O., organized a Volunteer Service Group for Columbia Hospital which enlarged the library of the nurses home, placed magazines, books, and flowers in the library and clinic, made 174 pairs of curtains and, when there was a shortage of nurses, served four days a week in the clinic.

Pickens Auxiliary, upon advice of their advisory council, requested and secured from the County Delegation a special fund of \$300.00 for tuberculosis work, and the city council gave an additional \$25.00 toward the project. As a result of the efforts of this Auxiliary, the County Delegation appropriated \$3,500.00 for an Emergency Hospital Fund.

These are a few of the outstanding projects reported. Each auxiliary has sent in a splendid report of work accomplished both on defense work and health projects.

Much interest has been shown in nutrition. The members have not only informed themselves on the subject but have held many public meetings, secured speakers for other clubs, taught classes, and distributed literature. One member arranged for a nutritional column in a daily paper and secured articles for it. The Auxiliary assisted in securing the passage of a bill by the Legislature requiring the enrichment of flour and margarine.

The historian has secured many interesting biographies of deceased physicians who have lived in the counties in which an auxiliary has been organized. We regret that this valuable collection will show so few biographies of those splendid physicians who live in other counties of the state.

The money for the Jane Todd Crawford Memorial Hospital bed has been raised.

Student Loan Fund collections have exceeded expectations. One auxiliary alone raised more than \$150.00 for this fund.

We extend a welcome to the members of our new auxiliary, Edisto, which is composed of doctor's wives from the three counties of Orangeburg, Bamberg, and Calhoun.

These reports are from only thirteen counties of our state. If all of our counties were organized and each unit devoted itself to the interests of the South Carolina Medical Association and to the nation, we could more than double our usefulness as an organization and at the same time continue and expand the harmony and good fellowship which has blessed our association this year.

MRS. R. M. POLLITZER,
State President,
Auxiliary, S. C. Medical Association

Dr. John M. Fleming of Spartanburg, has accepted a commission as Captain in the Medical Corps of the S. C. Defense Force and has been appointed Medical Officer of Spartanburg Home Guard Unit. Dr. Fleming succeeds Dr. T. A. Phifer, who has gone to Stark Hospital, Charleston, S. C. in the regular Army.

Dr. Harry F. Wilson of Columbia was promoted recently to the rank of Lt. Colonel in the Army Medical Corps.

Colonel Wilson entered the Army last July and was assigned to Fort George G. Meade, Maryland. He was later transferred to the War Department, Washington, D. C.

Mrs. Wilson joined her husband in Washington last October.

SUMMER DIARRHEA IN BABIES

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Presidential Address

GEO. M. TRULUCK, M.D.
ORANGEBURG, S. C.

The dastardly attack of the Japanese on Pearl Harbor, Sunday, December 7, 1941, was a signal for the mobilization of the doctors of this nation.

The doctor in time of war is of paramount importance to our armed forces, for it is he who must make physical examinations of each and every soldier, sailor, and marine inducted into service, and then supervise his health and morale throughout his military service. Our armed forces must be strong and physically fit, and must be able to endure hardships of the most severe type. The doctors who accompany these forces must likewise be physically fit as they too will be called upon to undergo dangers and hardships never before dreamed of.

Those of us who served at the front in France, in World War I, can in a way, visualize some of the problems that our doctors are facing in this war. However, we were not subjected to the modern mechanized panzer division, or to the terrors of the dive bombers.

Our armed forces will be the best equipped to ever don an American uniform. They will be accompanied by the most modern military hospitals that science and money can produce. It seems that as nations grow intellectually while they make and use the most modern weapons of destruction, they grow more cruel and barbarious, and treat with less consideration and respect the unfortunate wounded. Let us hope after this war is over that all nations

will agree to respect the Insignia of the medical corps, and the Red Cross, and in the future not attack concentrations of the wounded and disabled.

The men in our armed forces have been carefully selected, then immunized against all diseases possible, and have then been put through a hardening period of training that will fit them to endure the zero weather of the Arctic or the heat of the Tropics. This will stand them well, for if we are to believe reports, we now have armed forces in all the continents of the globe and many of the unnamed islands of the Pacific.

Never before have the armed forces of the United States undertaken such a stupendous task. But we will do well to remember that never before have we been engaged in a conflict with the treacherous Japanese or the barbarious, Hitler led, Nazi. The Italians are not mentioned, for in the first place they do not intend to fight, and in the second place, unless they have changed since 1917-18, they will not fight.

South Carolina has played a conspicuous part in all the wars in which we have engaged. South Carolina doctors have always been eager to do their patriotic duty. This was the case in the Revolutionary, War of 1812, War with Mexico. In 1860, the greatest conflict in history up to that time, it was an all out war for all able bodied men in the South. The doctors not only attended the sick and wounded but many of them commanded line troops in battle. Statistics are not available for the

(Delivered at Annual Session, Columbia, May 20, 1942.)

early wars, but we know that there were 9,000 doctors in the Confederate Army and as South Carolina had in 1860, 1400 doctors, it is safe to estimate that we probably furnished between 800 to 1,000 doctors in this conflict.

In World War I, we furnished 23% of our doctors for the armed forces of the United States, in round numbers, 329. We are just beginning the expansion of the army now in World War II, and though we have been in this conflict less than six months, we have in service from this state, around 200 doctors. We shall have to double and possibly triple this number within the next year. That is a problem for us to solve.

We have listed in the A. M. A. Directory 1404 doctors, but after this list was investigated by our council we find that we have only 1061 doctors in active practice in the state, for a population of 1,899,804. Before the national emergency arose, and before we eliminated the inactive and retired doctors we had a per capita ratio of one doctor to every 1460 people. Since the induction of so many of our doctors into service, that per capita ratio has been changed so that it is easily now one to 2,000. The average per capita ratio in the United States is one to 726. There are 46 counties in this state, 33 of which now have a per capita ratio of more than one doctor to every two thousand population. Seven counties have a ratio of one to 3,000 or more.

With these figures in mind, we can easily see that the Procurement and Assignment committees are having to get our quota of doctors from counties and cities where our per capita load is less than one doctor to 2,000, and in a few instances where the county has a per capita ratio of one to 2500. A few doctors who come within the age limit must be left at home to care for the civilian population because of the high per capita ratio that exists in their respective counties. It might be of interest to note that in 1906 that 48.4% of our doctors practiced in towns of less than 5,000 population or rural communities, and that now we have less than 25% of physicians in these communities. Also it might interest you to know, that of the 363 doctors who have located in this state during the past 10 years, more

than half of them located in our four larger cities, serving less than 25 percent of our population.

The greater part of the doctors of our state within the age limit, are willing and anxious to serve in the armed forces, and many who live in isolated districts, who cannot be spared from their communities are anxious and willing to serve. I would like to say, here, that it is not an economic question with them, for in most instances the doctors who have entered the service, have done so at a great personal sacrifice. The salaries of a first lieutenant, captain, or even a major, is not the incentive that prompts them to volunteer their services, but it is a sense of patriotism, something that seems to be lacking in some parts of our country.

We, South Carolinians can be accused of many things, and we have many short comings, but our loyalty and patriotism cannot be questioned. We have a population that is American throughout, and one that has not been undermined by European immigrants bringing with them new theories of government, propaganda of dictators, and fifth columnists.

With so many of our young doctors in service, and with so many yet to go, those of us who are left behind will be forced to work harder and take on added responsibilities. We are not in an enviable position, and there is no help in sight, until after this conflict is over. We are not yet ready to have located among us refugee physicians from Europe. We sympathize with them in their economic condition, but we cannot receive them with open arms without proper credentials, and without them complying with our state laws for the practice of medicine. While the greater part of these physicians are well trained and above reproach, yet there are among them those who are potential fifth columnists, saboteurs, and spies.

We shall have to depend, for additions to our ranks on those recent graduates from our medical college, who are found unfit for our military service. And let me say here now, that we have in Charleston, S. C., a medical college of which we are proud and one that we should support to the utmost. Let us hope that no effort will be made to cut its appropriations, but that we

can educate our legislators to the necessity of adequate appropriations for this college that is the source of our future supply of doctors in South Carolina. We should make every effort to keep it on its high plane, and stand behind it, using our every effort to see that it will never be made a political football, to be bounced around by our politicians.

Our hospital situation is of extreme importance at this time, and in view of the fact that we are in the defense area, with the possibility of attacks on our coast or inland cities, it is well that we might review our set-up, and see just where we stand.

We have in this state, counting both large and small, forty-two general hospitals, nine of which take care of white patients only, five of which take care of colored patients only, twenty-eight of which take care of both white and colored. These hospitals are located in twenty-seven of our forty-six counties. Geographically they are so situated, that every area of our state is within thirty miles of a hospital, except three counties bordering the Savannah River. All these hospitals are owned and operated by communities, counties, and municipalities, and religious denominations. It is of interest, and probably a reflection on us, that we have only two hospitals with sufficient endowments to in any way assist their operating expenses.

In these forty-two hospitals, we have a total bed capacity of less than 3,500. Only three of these hospitals are recognized by the A. M. A. for internship. Our average of 1.8 beds per thousand population, is the lowest average in the nation except Mississippi and Arkansas. The average in the United States is 3.4 beds per thousand population, some of our wealthier sections average 4 or 5 beds per thousand population. The highest average in this state is Greenville with 2.1 and Spartanburg, with 2 beds per thousand.

These averages are constantly changing now, due to a new building program and proposed building programs. If all the building programs now started, and those contemplated are completed, it will mean about an additional thousand beds to our hospitals. Even this addition will only give us an average of 2.5 beds

per thousand population. If all the general hospitals in South Carolina could double their present capacity, we would then have just a little above the average for the entire country.

Our hospitals are largely supported by direct taxation, and in this there is a wide difference, due to the political set-up in various counties. Thirty-four counties in the state, make direct appropriations to care for the needy sick. Twelve counties make no appropriations at all. Some of these, however, do assist the needy sick by diverting some of their contingent funds to hospitalization. It is a notable fact that those counties that do not make appropriations, have no hospital facilities in their county, and have to depend on surrounding counties to take care of their indigent population. This is a source of embarrassment to the physicians in these counties and one that should be corrected.

The size of these appropriations does not depend upon the wealth of the various counties but apparently depends upon the pull we have with the senators and legislators of various counties. The smallest county and possibly one of the poorest, makes the most liberal appropriation for hospital care. This is Jasper county. In all appropriations by counties and municipalities in this state, the sum total is less than that derived from the Duke Endowment and is less than what is spent for public health.

Our various hospitals in the state received from the Duke Endowment, last year, \$358,963. Were it not for this fact, many of our hospitals would be unable to take care of the charity load that they now are carrying, and many of them would be running at a great loss.

This situation should not exist. It is a matter of educating our politicians to the realization of their responsibility to maintain and finance our hospitals which are taking care of the indigents in this state. Our state economically is one of the poorest in the Union. Our present per capita wealth is \$255 and our present per capita income is only \$300.

We have many problems to solve in this state, and some that claim our attention at present, and that cannot be put off are; first, the assisting or rehabilitation of our rejected

draftees, the assisting and cooperating with the Emergency Medical Service for Civilian Defense. Then too, our general practitioner will have a problem due to the shortage of tires and gas rationing.

In planning for the future for an adequate distribution of our doctors and more adequate care of our civilian population, we must ever keep in mind the fact that 39% of our population is employed in farming and 22% in manufacturing.

Of our population of 1,899,804, 462,512 live in the cities, and 1,332,607 live in rural communities. We also have a health problem to deal with, that might well claim attention at this time. We boast of being the healthiest country in the world, but the results of the examination of our young men for Selective Service up to December 15, might well make us think that there is something lacking. Thirty-six per cent of these young men were rejected in the South, 40% were rejected in S. C. We also might bare in mind the extent that poor health reduces the earning capacity, both in the rural districts and our cities.

The Farm Security Administration in a recent report shows the result of the physical examination of 11,000 people in 21 typical counties in 17 of our states. The results are as follows, an average of 3 1-2 defects were found for every man, woman, and child examined, bad teeth coming first in the list of physical defects. One out of every twelve was suffering from malnutrition, and one out of every 17 from rickets. It goes on further and states that of the draftees examined in South Carolina, whereas the average over the state was 40% rejected, only 23% were rejected

from those who lived on Farm Security Administration Projects.

During the period from July 1, 1940 to July 1, 1941, there were 44,486 births in South Carolina. Of this number 43 per cent were delivered by mid-wives and 57 per cent by doctors.

In the low income group of our citizens 29.8 per cent of the total income is paid to physicians in private practice. A complete survey was made of five of our typical counties showing that the average family spent around ten dollars a year for medical care. It is estimated that 25 per cent of our population does not even call doctors when often they are needed, because of economic conditions.

With these facts before us, with an inadequate supply of doctors and coupled with that, an inadequate number of hospital beds in this state, how shall we cope with this situation? Shall we subsidize the practice of medicine to induce doctors to locate in the smaller towns and rural communities where they are needed? Or can we, without destroying our doctor-to-patient relationship, put in use, some plan such as that which is now being tried in Newberry county, under the auspices of the U. S. Department of Agriculture? Or shall we attempt to go on in our same old way, without heeding the need to cope with the new social order, or shall I say social revolution that is sweeping our country?

Our medical practice must undergo some change, for our modern medical methods are out of step with modern social conditions. If our democratic way of practicing medicine is to exist, we must change our methods of thinking, and our methods of caring for our civilian population.

Aviation Medicine

COLONEL DAVID N. W. GRANT, M.C.

AIR SURGEON

Introduction

Three dimensional warfare: This characterization better than any other describes the tactics of World War II. Fluid war—war of motion has succeeded the static single dimensional type of warfare of World War I. Armies no longer burrow themselves into the earth nor depend upon sheer frontal mass for their power. Today small units spring out from their bases like spearheads or pincers relying upon wheels, wings, speed, and new spheres of activity, for their destructive force.

For the first several million years of his existence, man was essentially a three to fifteen-mile-an-hour individual. His activities were in two planes and limited to the surface of the earth and the sea. Within the span of one generation the tempo of his movements was increased to about fifty miles per hour. The succeeding generation, the generation of today, in a few short years finds itself operating in three planes, no longer limited by the surface of the earth and sea, and has increased the limit of its speed to well in excess of four hundred miles per hour. We are told by the physicists that speed of aircraft as we know the machines of today is limited by the speed of sound—approximately 760 miles per hour, but we may well see this speed exceeded as new methods of propulsion are devised. Propeller blade tips already approach or equal this speed.

It is superfluous to point out that evolution per se could not cope with this change. Possibly through the tricks of mutation an occasional superman might be propagated who could adapt himself better to this new environment than the average. But this is no time to wait for or to seek supermen. Better and more practical, we must make possible through selection, training, and the use of mechanical, chemical and other adjuncts the adaptation of the average individual. This is the role and the precept of aviation medicine.

(Delivered in Columbia, May 20, 1942, at Banquet during Annual Session.)

Since its release from the manacles of prejudice and mysticism of the dark ages, the art of medicine has advanced in step with or even ahead of other sciences which have fostered changes in our mode of living. Each new hazard has acted as a stimulant for its own conquest. The hazards of each new industry have been met by advancements of industrial medicine. Civilization cannot but expect those of us who practice our profession to cope with the hazards of our new modes of movement. This new effort—that designated as aviation medicine—is only a logical consequence.

That aircraft should develop into the most destructive weapon of all times was neither the dream nor the desire of those who spent their lives and energies towards its development, but fate and the greed of the few who preferred to gain their ends through terrorism and chaos have seized upon it for this purpose. The efficiency of their efforts cannot be doubted. But fire must be met with fire. Thus our job now is to develop more fire and of a more destructive brand to meet that which they turn on us. We must make more and better machines than they, and man them with more efficient personnel. At the the same time we must offer those who are flying with our armed forces every reasonable protection in order that they may do their job well.

Historical

Aviation medicine had its inception through the genius of two brothers, Stephen and Joseph Montgolfier, who at Annonay, France in the year 1783 invented the balloon. The first flight took place June 5 of that year. A short while later, in order to determine the effect of flight upon animals, a sheep, a duck, and a chicken were sent aloft. As subsequent examination failed to demonstrate injury to the animals it was decided to repeat the experiment upon the human being by offering a condemned criminal his freedom if he returned from the flight alive. A proud young French nobleman, Pilatre de

Rozier objected to such an honor befalling a criminal. He himself volunteered. On October 15, 1783 he made a balloon journey. His only ill experience was that with his ears; an effect which continues of major importance to-day. Upon Paul Bert, another Frenchman, we must bestow the honor of being the first physician to devote extended study to the effect of flight upon the human organism. In 1878 he published a comprehensive book describing the effects of barometric pressure change upon man. Following this work there was little progress until some ten years after the Wright brothers made their momentous flight in heavier-than-aircraft. War was the stimulant. The idea that man could better observe the position of troops from the air took no brilliant mind to conceive. When opposing groups of aircraft vied with one another for the privilege of unhampered observation, aerial combat was forthcoming. The dropping of missiles upon the unsuspecting adversary has long been practiced by our own simian cousins. The application of the principle by some of their short range descendants must have been expected. But the mode of development of aerial warfare is unimportant; the fact that it was developed and is well on its way to forcing a decision as to whether civilization is to survive, is important.

The decades which had intervened between the first motor flight of the Wright brothers and World War I had demonstrated that flight was associated with many physiological and psychological phenomena which forced certain limitations upon human performance. The speed of reaction necessary to meet simple situations, the coordination of activity concerned with movement in three rather than two planes of space, the suppression of the inherent fear of falling, to say nothing of habitation of a space almost totally devoid of the very elements required by man for his existence, and various other problems challenged science.

Small groups of physicians, physiologists, psychologists, and physicists initiated experimental studies in this realm. Liaison between these groups and the Air Service demonstrated their worth in terms of pilot efficiency and this

young upstart, in the field of medical specialty, cut its teeth—but in the hard way. Lack of precedents forced the use of methods of trial and error, statistical study, and armchair philosophy with its resultant diversity of opinion. But nevertheless most of the conclusions drawn were correct. The development of our own Air Service Medical Department summoned the best scientists of the time and took the problems into the laboratory and the low pressure chamber. By the end of World War I a solid foundation for Aviation Medicine had been established. The Flight Surgeon had been born.

The years between saw the evolution of an air minded people. The war plane put aside its war paint. The youngster who had learned to fly at the army training fields which had mushroomed during the last half of the war brought a discarded Jenny and became a barn-stormer. He combined ingenuity, enthusiasm, and bailing wire, joined the county fair circuits and awakened America to true air consciousness. Air mail was but a short step; commercial transport followed. The more progressive were using air transportation to accomplish in one day that which had formerly taken three. Our continent was constantly traversed between dawn and sunset and between sunset and dawn. Breakfast in the frozen lands and dinner in the tropics ceased to be a novel experience. The hazard of weather was reduced by simply flying over it. Much of the credit for this advancement must go to the research efforts of our army and navy air forces, whose leaders pointed the way for civilian aircraft development.

Aviation medicine had proved its worth in this development and in 1918 a school devoted to the medical problems of aviation was established by the U. S. Army Air Corps. Medical officers of the army, navy and the Reserve as well as National Guard components were invited to prepare themselves in this specialty by means of a practical and didactic introduction to the problems involved. Aviation had only reached its adolescence when it became quite evident that the machine was rapidly surpassing the man in ability to perform. A research medical unit for the study of the

new problems was established at Wright Field, Dayton, Ohio. Much of the history of aviation medicine has been written there.

When Spain and Ethiopia evidenced the first twitches of the convulsive seizure which was later to endanger free men, the prophecies of our air minded leaders became realities. Ethiopia and Spain had furnished a laboratory. The technical data thus gained was returned to Germany and Italy for the perfection of their aircraft, organization and tactics. These people who are now our enemies recognized the necessity of aviation medicine. They devoted much effort and time to this field. We must admit that much of their work was excellent. To return to our own experience, we find that gathering of the storm clouds across the sea did not go unheeded. Our aircraft production was doubled and redoubled to astronomical proportions. Customs assembly gave way to the methods of mass production. The demand for the training of physicians to care for the problems of air force personnel was met by expansion of the facilities of the School of Aviation Medicine. For each man who was being graduated three years ago one hundred men are now receiving their diplomas. The navy has established its own School of Aviation Medicine. This vast expansion of all Air Force facilities will continue until every Axis aircraft is driven from the sky, the injustice of aggression righted, and the stab in the back avenged.

Problems of Aviation Medicine

As we turn to the specific problems which face us today we must consider briefly a few of the physical characteristics of the space above the earth in which aircraft operate. The atmosphere is a flowing gaseous blanket which envelops the earth. At least to an altitude of 72,000 feet, the height reached by Stevens and Anderson in their stratosphere balloon flight, the chemical constitution in terms of percentage remains about the same; that is approximately 20.93% oxygen, 78% nitrogen and 0.04% carbon dioxide. There are traces of other gases, but as they are physiologically inert, we need give them no consideration. However, the density of the atmosphere and

consequently the availability of these elements in any given unit and the partial pressure at which they are delivered to the capillaries of the alveoli varies with barometric pressure and thus undergoes progressive diminution with altitude. Thus at a level of about 18,000 feet the atmosphere is only half as dense as at sea level; at 32,000 feet, one-fourth and at 48,000 feet about one-eighth as dense.

Up to an altitude of about 10,000 feet the barometric pressure and density of the atmosphere is sufficient to support most forms of human activity as long as physical exertion is limited. Above this level it is necessary to supply from auxillary sources enough oxygen to augment the natural deficit and thus assure normal mental and physical function. The exact altitude at which an augmented supply of oxygen is necessary varies slightly with the individual, his physical condition and the amount of activity which is necessary for him to perform his duties. The level of absolute tolerance without supplementary oxygen is called his "ceiling." This critical limit is usually in the neighborhood of 18,000 to 20,000 feet.

Oxygen in varying proportion, depending upon altitude requirements, can be mixed with the air which the individual breathes and supplied by means of face masks. The amount of oxygen which can be supplied to meet the deficit is, of course, limited to one hundred percent of the material breathed. At an altitude of about 35,000 feet the atmospheric pressure is decreased to such an extent that even 100 percent oxygen ceases to supply enough oxygen to the alveolar capillaries to prevent tissue anoxia and thus support life. Means by which oxygen can be supplied under physiological pressures, of course, is the object of much investigation. Pressure cabin aircraft in which the air in the cabin is compressed to levels approximating that near the surface of the earth were devised sometime ago. We will hear more about their efficiency in the future.

Temperature also decreases with altitude. Varying with the season and latitude, mean temperatures may be considered in terms of the Centigrade Scale to be about -5 degrees at 10,000 feet, -25 degrees at 20,000 feet and

—44 degrees at 30,000 feet. At about 40,000 feet the temperature reaches more or less of a constant —55 degrees from which there is practically no deviation up to the level of 70,000 feet. Naturally there can be no physiological adaptation to such temperatures. Consequently airmen operating for any considerable time above 15,000 feet must receive protection from outside sources. This protection, whatever it may be, must afford warmth without restriction of movement, for the lives of air crews depend upon the quick, accurate, unhampered movements of the pilot and machine gunners. Such equipment challenges the ingenuity of the designers.

As has been pointed out, operational speed of aircraft, is now well in excess of 400 miles per hour. This represents a velocity of nearly 600 feet per second. The reaction time of a simple reflex is about one-tenth to one-fifth of a second. To carry that reaction into aircraft controls takes more nearly a second or two. One can readily see that alertness and quick reaction time are primary necessities for the pilot.

Such speeds as are encountered with flight are associated with tremendous physiological effect from acceleration, deceleration and sudden changes in direction of motion. Displacement of the body tissues and fluids are the result. The so-called black-out or mounting loss of vision is an extreme example of the more severe physiological effect. This phenomenon is probably due to a displacement of blood from retinal vessels.

In such maneuvers as the pull-out after a dive of high velocity or a sudden change of direction as is encountered in aerial combat the black-out or its milder prototype, the grey-out is of grave importance. Much study is being devoted to methods by which this physiological reaction may be minimized. Changes in pilot position and posture, pressure suits and other devices bid well to increase the tolerance of the air crew to these maneuvers.

Selection

By far the greatest single task which confronts those of us who are charged with the responsibility of placing young men from the

school, the farm, and the factory into a strange new machine in a stranger environment, is the problem of selection. We must, from the thousands of young Americans who are arriving at the various Air Force Classification Centers each day, decide who shall be the pilot, who the navigator, the observer, the gunner, and also who shall remain on the ground to service and maintain the priceless equipment that the others shall fly with safety. To make these decisions in the manner of the Democracy for which they are asked to fight is, to say the least, a Herculean undertaking. Every aid, medical, physical, psychological, and educational has been summoned for this purpose. The decisions made must be right and without reservation, for time is short and it may be later than we think.

This youngster may never have seen an airplane at close quarters; that young man may have never ridden in one, but from experience we know either may make just as efficient a combat pilot as his friend with 400 hours of flying time. Other attributes being equal, it would be an injustice to our effort, as well as to the young man, not to give him an opportunity to prove his worth. The doctor, the psychologist, the educator, and the airman must cooperate to make that decision which is to divert him into the air, the machine shop, or the supply depot, or just behind a work desk for drudgery without glamour. Heartaches will occur, mistakes will be made, but better a hundred heartaches than a single mistake.

The most important of all the requirements for the airman are the three sights, visual sight, foresight, and insight. The force of gravity precludes hindsight. Unlike the three monkeys, the airman, must see everything, hear everything, and think of everything.

The visual apparatus of the flyer is called upon to operate at functional extremes—extremes which are inherent to no other occupation. In normal flight airmen must constantly shift their gaze between the horizon—the earth's most distant area—his multifold instruments, and possibly the small print of his map, thus passing through the extremes of the range of the visual focus. Each object must

be registered, interpreted, and filed away in his consciousness to be discarded or called back at the will of an ever-changing situation. His complete perspective is altered by altitude and distance. That which he has learned to experience as a massive structure is now a Lilliputian blur. That which he has learned to perceive in terms of vertical walls contouring the streets of the city is now a flat checkerboard of criss-crossing shapes. Yet his interpretation must be the same.

His eyes must function equally well in the glare of the sun and in the blackness of night when he returns to his home base to descend, level off, and land on an airdrome possibly blacked-out to avoid detection by the enemy.

His color vision has taken on a new significance. The fact that he selected a green tie when one of brown would have been more appropriate has only aesthetic importance—the selection of a wet green field when a dry brown one would have been more appropriate has real importance. His occupation does not allow him to go back and try over again.

Foresight is that ability to project one's self into a future situation and to break that situation down into its basic components before actual experience. Although foresight is based upon knowledge and past experience, ability to synthesize these elements is inborn. To the airman, foresight means the projection of bits of maps, a series of regional weather reports, wind velocity and fuel consumption charts into a composite flight plan which will fulfill his mission. Symbols, words, graphs, and slide rules must be combined with past experience to mean icing conditions here, unfavorable winds there. Teletype transcriptions, verbal directions, shifting columns of smoke, the readings of a wing thermometer must be pieced together to form a picture of either instrument weather or just blue sky ahead. Certainly this attribute is necessary, but how can we select for it? The answer is only through an examination of his plans for solving simple situations, the methods used and the results. How did he solve the necessity of getting an education? What are his plans for the future? Does he look before he jumps or does he jump before he looks? All of his life he has used

foresight to a varying degree. Our task is to make both a qualitative and quantitative estimation of it.

The third member of our trilogy is insight. Insight is judgment. Again we must examine that which is abstract to form a concrete conclusion. What are his abilities to learn? What are his sense of values? Does he have that characteristic known, for want of a better term, as horse sense? Such selection under the pressure of time imposed by active participation in warfare is, of course, fraught with many difficulties. Fortunately our plans have long been formulated—expansion is our only requisite.

To return from the borderline of psychology to the more physical of the requirements, let us consider the cardiovascular system. The characteristics of flight, as it has been said, demand certain new adaptations of the body. Certain of these adaptations require maximal function and stability of the cardiovascular apparatus. The necessity of compensation for transient anoxic states, as well as the displacement of body fluids brought about through acceleration, deceleration, and change in direction of motion place stresses and strains upon man's circulatory system which are not met in the usual forms of existence. Fortunately, nature has endowed most of us with an apparatus capable of adjusting itself to meet these situations providing it is normal. We are looking for the normal.

The individual with vasomotor instability should not pilot aircraft or have other responsible flight positions. The cockpit of a bomber is not the place for a vasomotor episode even though the view is unpleasant and the emotions are taxed. Again the cardiologist must be a psychologist and the psychologist must think in terms of cardiology.

Of the special sensorium, the ears are second only to the eyes in our scale of importance. The pilot of today depends upon his hearing for much of his navigational aid, as the radio beam is his roadway. He has learned to recognize the crossing of beams from distant points as his cross-roads and his mile post. He depends upon his radio for ground and inter-plane communication, for weather report, and routine dispatch work. It is important that

from the subjective standpoint, the ear is more affected by flight than any other portion of the body. Up to the present stage of development of aircraft, noise and efficiency seemed to be more or less inseparable. After long periods of exposure to the sound produced by the propeller, the motor, the air passing over the structures of the craft, and other sources there is a loss of hearing in the high tone range. Fortunately the effect is usually only temporary; however, after long periods of insult some permanent damage has been reported.

All of the closed gas containing spaces of the body are affected by alterations in atmospheric pressure associated with ascent and descent. Included among these is the tympanic cavity which is closed except during the act of swallowing, yawning, or some other similar process. In order for the hearing apparatus to conduct sounds well it is essential that the air pressure inside the tympanic cavity be equal to that of the outside atmosphere. When the eustachian tube is functioning normally, this equalization takes place with each act of swallowing; however, when through anatomic deformity, swelling, or other cause, the eustachian tube is not properly opened during the act of swallowing, the pressure differential between the outside and the inside of the tympanic cavity may, during ascent or descent, be great, resulting in great pain and possibly rupture of the ear drum.

The vestibular apparatus has been the source of much aero-medical research. Through experience it was determined that flight was associated with certain deceptions in the interpretation of position in space when, due to weather conditions, clouds, external objective reference to the surface of the earth was lost. Some of these deceptions are: the feeling of ascent when turning and of sinking on recovery from turning; the sensation of tilt to the opposite side during a turn; a sensation of tilting when flying between two cloud banks of different slope; of turning during even flight; the feeling that the aircraft is tipping during too sharp a turn; and lastly, the sensation of spinning in one direction following a spin to the other. Through the cooperation between an airman and a flight surgeon, instru-

ment flight, one of the epochal advances in aviation was developed. Today we require normal balance function of our airmen, but it is necessary to supplement this with a knowledge of the illusions of sensation encountered in flight and an absolute confidence in the instruments which denote spatial position. The instrument pilot disregards entirely his own sensation of position in space and relies solely upon his instruments. As long as he believes in them with implicit faith he is safe.

Volumes upon selection alone fill our archives, but as the scope of this paper is limited, it is impossible to dwell long upon any single feature of aviation medicine. However, two phenomena at times associated with the severer types of operational flights and which are of interest to us today are: aero-embolism and pilot fatigue.

Aero-embolism results from a disturbed equilibrium between the nitrogen of the blood plasma and tissues and that of the outside air. By application of the laws of partial pressures it can be proven that all gases pass into solution in the fluid plasma of the blood proportionate to their partial pressure. Thus at ground level the nitrogen of the plasma is in equilibrium with the nitrogen of the air. With ascent, however, lowering of the atmospheric pressure disturbs this equilibrium and nitrogen tends to come out of the solution. If the ascent is slow the nitrogen has sufficient time for diffusion through the lungs but if ascent is extremely rapid and to a great height, the gas may form bubbles in the smaller blood vessels and in the tissues. The bends of caisson workers is produced by exactly the same mechanism, but of course, this condition is more severe in degree than anything we are experiencing today.

Pilot fatigue is one of our strange imponderables. It is important because its onset is insidious, its symptom picture is vague, and laboratory findings are negative, yet we know it to exist and we know its presence to endanger the life and efficiency of the individual as well as those about him. We also know that if treatment is to bring about a prompt alleviation of the condition, a diagnosis must be made at the earliest possible moment and corrective measures instituted at once. This form of

fatigue is a true occupational disease. The pilot who suffers from the early symptoms is no longer alert, interested, aggressive, or efficient. His surroundings irk him and he reacts wrongly to them. Fortunately the treatment is usually simple if the condition is recognized early. As his environment is not good for him and as he is not good for his environment, a period of separation between these two is in order and is usually followed by prompt and complete recovery.

Before concluding, it would be remiss not to mention something concerning aerial evacuation of wounded. In present warfare the zone of active combat often lies a comparatively great distance from a base of sufficient size to support adequate forms of specialized hospitalization, or surgical care. Aerial transportation is ideal for this purpose. Its use will be

greatly increased in the future. Aside from the medical efficiency brought about by removal from the zone of operations to a surrounding of relative peace and quiet, it is quite obvious that an important psychological element of morale is involved. For a wounded man to know he is soon to be in a safe friendly area, clean and comfortable with all the skill and equipment of modern medicine at his side, his powers or will to recover are much greater. For troops to know that a means is at hand for their care if they are injured increases their morale, without which they cannot fight efficiently—with which they cannot be stopped.

We of America today face on the field of battle the greatest array of armed might assembled against us in our entire history. Air power will be decisive; aviation medicine will play a major role in the victory which shall be ours.

An Address

MAJ. GENERAL LEWIS B. HERSHEY
DIRECTOR SELECTIVE SERVICE
WASHINGTON, D. C.

General Springs, Mr. President, Members of the Medical Fraternity of South Carolina, it is a very great honor for me to be here, an honor that is mingled with things that have gone on in South Carolina over not only months but years. I see here before me representatives of some 20,000 professional men of these United States who, for the past year and a half have gladly given service that money could not buy. One of the great strengths of the Selective Service has been the fact that to make it work on the local level large numbers of people had to sacrifice in order to have the things done that had to be done. And I need not tell the doctors of this state or of this nation the very great part that they have had in making Selective Service work, not only in the past but in the present, and I know that your continued efforts are going to insure that it work in the future.

I said I was glad to be in South Carolina. I have known over a period of years the work that has been done by your governors, by your Adjutant Generals, and your State Staff, and since the passage of your Selective Service law by the State Director and his assistants, not only in the State headquarters but in the Appeal Board, the Medical Advisory Board, the Local Board, the Local Board clerk, and the lawyers and doctors who are acting as Government Appeal Agents, and the others who have given their time and efforts that we might have a fair and equitable manner in which men might be selected for the high responsibility of either going to fight in the service or, if it was in the interest of the government, to be selected to remain, for a definite or indefinite time, back on this other front, where in modern war no small percentage of our people must operate. Everywhere I go, every place that I see the doctors and the dentists and the lawyers and the local board members I gain optimism,

(Delivered at Annual Session, S. C. Medical Assoc., May 21, 1942, Columbia, S. C.)

optimism comparable with the feeling I get when I see tanks loaded, one after the other, on flat cars to go to whatever front they may be needed; optimism that I think is justified in what is being proved in these United States.

A democratic people may grow intellectually and morally fat in times of peace; may ignore or neglect their responsibilities when times are presumably good; may become indolent in making preparation to defend themselves; may be shortsighted in taking the steps necessary to live in the world we are living in; but when the time comes and they are fully alive to the situation that confronts them, when they are fully awake to what is necessary to perpetuate our nation in these times, they show as they have shown in the past few months, what a free people, a people that are untrammelled by instructions from above, untrammelled by many of the conventional ways of doing things, can do not only in manufacturing, but in selecting themselves to go and take the responsibilities that must be assumed by the able-bodied men and women of this country in its time of need.

I might say in passing, that I never had any doubt about what the State of South Carolina would do. I know what your history has been and what your forebears were, and I know how jealous you are of freedom and liberty and what you will do to perpetuate, by self-discipline, the only thing that will eventually prevent centralization of authority. I think Selective Service, and you as a part of it, has done its part to show the world that decentralization, which is the operation of the democracy, will work and work better than centralization. Centralization means there will be no action until decision is made at the top. Decentralization means there will be action unless it is stopped somewhere else.

The army is doubling this year, at a very minimum. Probably, if calls are speeded up, it will do much better than that. And whether it does better than that, the bottleneck is not the Selective Service System. The Selective Service System, at least in 1942, can produce all of the men that we can possibly use, and the reason for it is because men and women, like you, have assumed your share of a responsibility. And it is the only way that we

can prove that democracy does not deaden its people and does not put them into places where they vacillate, and in places where they refuse to assume responsibility and where they refuse to act. And I think we have given the lie to the statement that democracy can not do what it must for self-preservation. And that I believe has been one of the contributions of Selective Service.

I would like to say a word or two about the general manpower picture. In a war it seems we get into a great many "M's." In this mobilization to change from a peacetime setup to a wartime setup the use of materials, and of man-power, and of minutes (if you want to measure time by minutes)—those are the things which decide whether or not you are going to save the war in the first place and win it eventually. Materials, man-power, and minutes—I suppose if you want to dignify or describe brains by the word management, you have another "M".—And probably an intelligent use of Materials, and Man-power, and Minutes and Management will give you Morale,—morale on a national basis. It has been a very much hooted about word, but you are to think in terms of the army, and think not in terms of armies as divisions but rather of companies. We think when a soldier is reasonably well-fed, and well-clothed, and equipped, and he has fired his weapon enough to believe it is as good a weapon as there is anywhere and in his hands is a better weapon than any of his adversaries might have, when he has faith in his ability to use that weapon and faith in the man who marches or drives or flies on his right and left (it doesn't make much difference what the means of locomotion may be) and when he has confidence in the man who directs what he does, as well as confidence in his fellow flier, tank driver, or fellow soldier in the squad, then, whether you describe it as morale or not that is what this soldier has, and that is what we want to accomplish in these 3,600,000 or 5,000,000, whatever the numbers may be, by the intelligent use of materials which we are fortunate enough to have in this country.

We have heard a great deal in the past weeks of the necessity of tripling the number of men

and women in war industries; of the necessity of doubling the numbers in our armed forces; and of the necessity at the same time of maintaining our production of food at a level where we will not only be well-fed but will have surplus to give allies less fortunate. We must maintain health because health has a very definite place in the efficiency of these fifteen or twenty million in industry, the eight or nine millions you have on the farm, and the millions you have elsewhere in our civilian communities. Health is a very very serious problem because what a sick tool maker can produce, of course, is zero whereas, if he is healthy, by his intelligence and his knowledge and his skill he may activate the assets of many others and produce fifteen or twenty times as much as he himself could produce. So, health is not only important now as you look at it from the standpoint of numbers, but it is particularly important when you look at it from the standpoint of particular individuals, with skilled workmen as rare as they are now. Certainly we can not have any skilled man ill if we can possibly avoid it.

In this mobilization of man-power, we must try to get industry to realize that the ideal man no longer can be sought for the job. That the numbers of men between 17 and 18 and the early 30's is reasonably limited and that in spite of any reduction in the physical qualifications for a soldier we will be compelled to reject anywhere from 25 to 35% of those between 17 and 18 and the early 30's, brings us to the realization if we are to have an army of seven or eight million, with perhaps another million or more in the navy, we are going to be compelled to look very carefully to all our able-bodied men in our land. I realize there are many above the 30's that can perform duties in the army. I do not join that group who believes, this being a mechanized war, that you can take a man of any age because he can ride to his work. Each time I ride with my seventeen year old son and he shows me how near he can put our automobile to some other object and not hit it, teaches me that there are things that the youth possesses in the ability to get eye and hand and muscle working together that somehow or another has been worn out or

been lost by individuals my age. That is one reason that some of us have to make a virtue of what we think and how well we think, because that is about the only contribution that we have left. So, unfortunately in this modern mechanized warfare there are many things that, after all, we will have to look to the modern young man to do and that we cannot expect to take from our older groups a very large percentage.

If we have good classification, if we have intelligent management, we may be able to absorb in special jobs in the armed forces not a few of those in the 40's, but a man in the 40's is a greater problem for management in the army than one in the 20's. I have heard people say the shipyards, the airplanes, the tanks, and the army and navy and even the ladies prefer men under 30. I don't know if that is true or not, but be that as it may, it is one of the problems that we must meet in trying to decide how intelligently and efficiently we are going to use some sixty million, or sixty million plus, working units, human beings, men and women. Forty million of them approximately are men and thirty million of them approximately are women. We must make mistakes sometime because they are not between 17 and 30. The men run from zero to 100 and the women run all the way from zero to 30. Fortunately we have very few ladies over 30. Because of their wide disparity in age these men can do a great variety of things but not all of them can go into the service now, even those younger; and I needn't say this before a group of doctors.

We have another problem that I have been misquoted on many times, that is the question of dependents. Not only are we forced to the necessity of trying to see that each man occupationally does something that is of value to the country in war, but we have the problem of the family. If the family was a static thing, if speaking the word "dependent" gave you a very clear picture the matter would be simple. But, unfortunately dependency means everything from the mother who receives \$5.00 from a son that she hasn't seen for years, to a man who has four or five or six children and a wife, where he not only furnishes the

money but helps with the housekeeping and washes and dries the dishes and washes the clothes or helps with hanging them up, and mows the lawn and does everything else a wife and daughters could think of his doing. I happen to have a little experience along this line. I have a wife and daughters and sisters and a mother-in-law who prod me up to do this or that and I am about the only man handy and they can think of so many things for me to do that will help my health and things to do for my advantage. We have, by use of the word "dependents" a very wide range of individuals. Now, monetary allowances will solve several hundred thousand of these cases because all that the man contributes is money. We have had the problem of the recently married, but of course that has been taken care of. When you get into the problem of the working wife you are in something that ranges all the way from the wife who works perhaps only a day a week, somewhere, to one who has supported her husband everyday since she had him. And, of course, all the local board must do is to make a fair determination of the rights of all these individuals and the government in each individual case.

I realize there is anxiety on the part of the registrants who are uncertain as to the future. I realize in the country we are all saying, "tell me, tell me what my future is. All I want to know is what is in the cards and I will be ready to meet it." I want to call your attention to the fact when your forebears came out and settled this country and when they were under the necessity of fighting Indians, and sometimes some of our cousins and present Allies, not to mention the animals that roamed over this country, there was no security except as they gained it by clear thinking and hard fighting, and we are engaged now in a war to try to get security. The future no one knows and you will only get security as individuals and as a nation by winning the war. And, while it is unfortunate to have anything approaching hysteria it is equally unfortunate to have anything approaching complacency. It is very unfortunate indeed to have a man with three or four children under ten saying "Well, my nephew has gone to war, I suppose all I need

to do is go on about my business." I think he should not be confronted with the necessity of serving as soon as others but he must be confronted with the idea that he, whether he goes into the army or not, must do the thing that must be done at home to win the war.

Some people would say that we need 20 workers behind the lines for each man on the front. If that be true the number of men we could mobilize would be relatively small indeed. I think the initiative of the American minds will make it possible to manufacture material with far less than 20 and I would go so far as to say we are going to manufacture it with fewer men than we had planned. But that does not relieve us of the necessity of anticipating a condition where men and women will be scarce. We have come through a period of depression, a period in which we sought work in order to keep men busy and it is going to be hard to make ourselves realize the time is coming where we must find men and women to do jobs. It will be, of course, exactly the opposite of the situation we have come through in the last ten years. We face the problem of leaving men, occupationally, in the task they are doing if by pulling them out we will either stop or reduce production. But we are also faced with the necessity, on the national and state level, of making business and industry understand that young able-bodied, unattached men, who are now occupying vital positions, must be replaced at the very earliest time without reducing production. This means training, it means unprecedented turn-over. But wars are not times of convenience or of comfort. Sacrifices are made on every hand and I doubt very seriously if there is a military commander anywhere who has had the type of men he would like to have with the amount of training he would like to have had them have. He has had to take what he had and make a unit of it. And industry and our society must do the same at the present time.

Now, I doubt very seriously if there is any necessity of coming to this state and talking to the technical and professional men that you gentlemen represent, about getting into the services. I feel a little inclined, knowing you as I do, to think the problem, mainly, is to try

to keep most of you down here, as doctors, to try to do the job that must be done in the civilian population. When war calls you tend to strain a little at the leash and strive to get in. Your problem is to try to keep enough here to carry on the job that must be done at home. We do have a problem, nationally, in the shortage of doctors. I need not tell you we have gone very far in deferring medical students under the assumption that they would at sometime be doctors. We have the problem, as you know, of deciding what to do about pre-medical students. The best I can say to you is, we have recognized a shortage of doctors and a national shortage of medical students. Statistics are somewhat difficult to interpret and just what we have on the pre-medical student is not so evident because many pre-med students apply at several institutions for admission. To add up the number of pre-med students who have asked for admission to medical colleges gives you a figure that isn't worth too much because it has too many duplications in it. But, that figure is large enough at the present time and we have not become convinced that there is, as yet, a shortage of pre-med students and until such time arrives the best that we have felt we could do was to make every effort to give consideration to the man who had been actually accepted. Until he is accepted we have too little assurance that he ever will be a doctor. Now, whether or not the military force or whether or not the War Department would be willing to make any provision for the enlisting in the reserve or enlisting in medical registration or some other thing of the pre-med student I can't say. I

come from an independent agency of the government. I am loaned, probably with a great deal of pleasure, by the War Department to the Selective Service. I can not represent the War Department and I should not misrepresent them, but I do think that if and when the time comes it can be shown that pre-medical students are scarce as medical students are scarce, then the utmost consideration will be given, because we are going to need technical and professional men in the days and years that are ahead of us, whether we have war or not. The Selective Service System has always been very generous in its treatment of medical students, generous because we believe it to be to the best interest of the United States to do so.

I want to assure you it was a very great pleasure for me to be in South Carolina. I small always appreciate what the Governors of South Carolina have done to make my job easy. I am very proud of what Gen. Springs and his immediate military Selective Service family and his much larger family of those who actually fight on the Selective Service front, and that includes the Local Board and Medical Examiners and Appeal Boards and Medical Advisory Boards, and all others who operate here have done. And last of all I would like to say it is a very personal pleasure to be here and to see you all and to know that, come what may, men and women of the type and character of those I see before me are here in South Carolina. If I ever had any misgivings about the success of our efforts here, certainly to have the pleasure of seeing you would drive away all of them.

South Carolina Medical Association

1942-1943

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DEATH

Dr. Paul Eugene Payne, forty-five year old physician, who for the past thirteen years had served as City Health Officer of the City of Columbia, died at the Columbia Hospital May 4, 1942, following an illness of several days.

He was born in Saluda County where he spent his boyhood days, his family moving to Pelham, Georgia, when he was about sixteen years of age. He was graduated from the University of Georgia and completed his work in medicine at the Medical School of the University of Georgia, in Augusta. After graduation he went to Columbia, where he practiced his profession for the nineteen years.

Dr. Payne was twice married, his first wife being Miss Mary Hyatt of Columbia, who predeceased him. From this union two children,

Dovie Hyatt Payne and Paul Eugene Payne, Jr., survive. He is survived also by his widow, Mrs. Sybil Mahaffey Payne, one sister and five brothers.

Dr. Payne succeeded Dr. R. T. Jennings as health officer in 1929 and just prior to his death was reelected to serve in the same capacity for the next two years. He was a staunch member of the Columbia Medical Society, a member of the Board of Trustees of the Medical College of the State of South Carolina, a veteran of World War I, member of the American Legion Post No. 6, and the Washington Street Methodist Church. He was a member of the South Carolina Medical Association. During his life in Columbia he made a host of loyal friends and as a physician took a keen interest in the health of the community.

THE JOURNAL

OF THE

South Carolina Medical Association

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Original manuscripts, subject to approval by the Editor and the Editorial Board, are desired for publication in the Journal. They should be typewritten, double spaced, on 8½ x 11 paper. References should be complete, and only such as relate directly to statements quoted in the paper. Illustrations will be used as funds permit, or as authors are willing to bear the necessary increase in cost. Short original articles are preferred to long reviews.

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JUNE, 1942

AN APPRECIATION

The 1942 annual session of our Association has come and gone and has left in its wake a memory of one of the most delightful meetings which our Association has ever had.

To Doctor F. E. Zemp, President of the Columbia Medical Society, and to all of the committees which he appointed and which functioned so well; to Doctor N. B. Heyward, Chairman of the Scientific Committee, and to his fellow workers; and to all of the physicians of Columbia, the Association is deeply grateful for the preparations which they made for the meeting and for the genial hospitality which they extended to all who attended.

NEW FACES

With the beginning of each new year of work the Association finds new men in positions of leadership and we are delighted to present these men to the readers of the Journal.

Our new President is Doctor Thomas A. Pitts of Columbia, a veteran in association work. As Chairman of the Legislative Committee for many years, as member of Council and as Chairman of Council, as member of the Committee on Medical Defense and on the Advisory Committee for Procurement and Assignment Service, Doctor Pitts has served the Association efficiently and well and brings to the office of President a wealth of experience and knowledge which will stand him in good stead in the trying days to come.

Doctor W. Atmar (Billy) Smith is the President-Elect. Born in 1886, Dr. Smith was graduated from the Citadel and from the Medical College of the State of South Carolina. For many years he has been connected with his medical Alma Mater and is now Associate Professor of Medicine at that institution. His medical hobby has been tuberculosis and he is the Medical Director of Pinehaven Sanatorium. He has held important positions in State and National medical organizations. With this background, Dr. Smith is well qualified for the position to which he was elected.

Dr. W. W. Boyd of Spartanburg and Dr. J. B. Latimer of Anderson are the new members of Council. Dr. Boyd will represent the newly created ninth district and Dr. Latimer will succeed Dr. Hugh Smith of Greenville as a representative of the fourth district.

New members of the Editorial Board of the Journal are Dr. J. I. Waring of Charleston, Dr. George D. Johnson of Spartanburg and Dr. J. R. Power of Abbeville.

The appearance of new faces does not mean that those who have served in the past have been unfaithful or inefficient in their work. Rather it means that we are still in a democratic country and that we believe in giving more men an opportunity to serve their profession.

THE ASSISTANT SECRETARY

In times such as these when the status of no one can be assured it was felt advisable to

appoint an assistant secretary who could help the Secretary carry on his work and who could assume the work of the Secretary should the present Secretary be incapacitated or be called to active service.

Dr. J. Howard Stokes of Florence, was appointed to this position. First, as a general practitioner and then as a specialist Dr. Stokes has had ample opportunity to study the work and the problems of physicians and is well qualified to fill the position to which he was appointed.

ANNUAL DUES

During the past few months it has become more and more evident that more revenue must be secured by the State Medical Association if it is to function efficiently. To operate successfully the State Procurement and Assignment Service, under the leadership of Dr. W. L. Pressly, must have funds available. To

fight against legislation which is inimical to the best interests of the Public Health and of the medical profession the Legislative Committee must be able to employ the best of legal counsel and advice. To protect any of its members or their families who might face a sudden financial catastrophe, the Association should have funds on hand to aid in tiding over the emergency.

In view of this the Council recommended that the annual dues be raised from \$6.00 to \$10.00 per year. This recommendation was adopted by the House of Delegates without a dissenting vote.

Since the increase in dues will not take effect until 1943 and since the need of funds is urgent at the present time, members of the Association are asked to make a voluntary contribution of \$4.00 immediately. The money should be sent to the Secretary-Treasurer and he will expend it under the direction of the Council.

*"This is the way
to feel refreshed"*



Pause at the familiar red cooler for ice-cold Coca-Cola. Its life, sparkle and delicious taste will give you the real meaning of *refreshment*.

In Memoriam

(Presented by Memorial Committee, Annual Session, May 20, 1942, Columbia, S. C.)

Dr. V. P. Bell	Greenville, S. C.	Dr. John J. LaRoche	Charleston, S. C.
Dr. Robert Reid Berry	Union, S. C.	Dr. J. H. Matthews	Elliott, S. C.
Dr. R. A. Bratton	York, S. C.	Dr. W. S. Moore	Heath Springs, S. C.
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Dr. R. C. Brown	Lancaster, S. C.	Dr. Burk McLaughlin	Dalzell, S. C.
Dr. W. Lamar Bryan	Columbia, S. C.	Dr. L. B. Owens	Columbia, S. C.
Dr. T. J. Carroll	Summerville, S. C.	Dr. P. E. Payne	Columbia, S. C.
Dr. H. M. Carter	Smoaks, S. C.	Dr. D. E. Peek	Six Mile, S. C.
Dr. T. H. Dreher	St. Matthews, S. C.	Dr. P. A. Phillips	Springfield, S. C.
Dr. D. O. DuBoise	Andrews, S. C.	Dr. Edward Rutledge	Charleston, S. C.
Dr. Baylis Earle	Greenville, S. C.	Dr. F. H. Sanders	Spartanburg, S. C.
Dr. J. M. Halsey	Charleston, S. C.	Dr. E. W. Simons	Summerville, S. C.
Dr. W. C. Hearin	Greenville, S. C.	Dr. M. C. Smith	Simpsonville, S. C.
Dr. W. C. Hunsucker	Bennettsville, S. C.	Dr. J. H. Teague	Laurens, S. C.
Dr. J. B. Johnston	St. George, S. C.	Dr. G. D. Walker	Johnston, S. C.
Dr. D. R. Kneese	Batesburg, S. C.	Dr. A. M. Wilcox	Conway, S. C.
Dr. A. R. Fike		Spartanburg, S. C.	

A TRIBUTE

REV. F. B. ESTES, Orangeburg, S. C.

I think there is no profession which has a higher code of ethics than has the medical profession. Certainly this is true when you take into consideration the universally accepted nature of that code of ethics. We find on every hand abundant demonstrations and illustrations of the fact that the men who follow the medical profession give pledge to the highest of standards. So when we come to do honor to those who have died in their profession, in good standing in their association, and true to their trust, we recognize that they are worthy of whatever tribute, whatever honor and esteem we may offer to them in any such exercise as this today.

There is on the part of all of us, you more than anyone else, the recognition of the fact that the life of physicians, largely, is a hard life. There are hard years of preparation with their insistent demands on time and resources. Then there follow the years of service which the demanding public expects, sometimes with unreasonable expectations, of the physician. There are always long and irregular hours, always the strenuous duties that must be performed and the sleepless nights that are necessary in order that he follow his profession. Then, there is that added strain, a strain which is so wearing on the emotions, which comes from realizing that on his shoulders have been placed the physical welfare of hundreds of patients.

I feel very near to the medical profession, and I am sure that every individual in our state does. In your group today there are those to whom I am positive I owe the life of some of my own dear ones. For that reason I come to say to you that life has its compensations, that there are many things in the gratitude and in the esteem and the honor, which the public pays, to lessen the strain and to make the toil worthwhile. The honor and esteem and love of our fellows is enough to offset much of the hardships we have to undergo to follow any profession. I believe that at the death of physicians there are more people who genuinely mourn than at the death of any other group of individuals. So there are compensations and when we think of these, our fallen comrades, I am sure there comes to us the realization that in most instances their lives were eminently worthwhile, if for no other reason than that they have passed from us with large sections of the public loving and honoring them.

In a midwestern town in the days when that great section of our country was being developed there lived a physician who grew up in that town. He had little in the way of adequate equipment for the physical needs of his people, the only office he had was on Main Street in a second story room, the only thing at all to designate where he performed his office duties was a sign down on the street which read "Dr. Brown—Upstairs." After long years of service to his fellows in that little town he passed away. He was taken to the little village cemetery and his friends laid him in his last resting place. As the service was concluded one former patient in the crowd came up to place a marker on his grave. It was his shingle and it read with great appropriateness, "Dr. Brown—Upstairs."

I often think of that story in connection with physicians who have passed from us. After all, the ideal which governs your profession is an ideal of service. Last night I read again the great oath of Hippocrates. The high ideals that were held forth in that oath, the ideals of service to ones fellowman, are the ideals of the highest life that we know anything about in this dreary world, the ideals of the one called the Great Physician, who went about doing good and healing many of their diseases, the ideal which was inculcated in His motto which reads "The Son of Man came not to be ministered unto but to minister and to give his life a ransom for many." In following that ideal all these, our fellows, who have preceded us into the beyond, are worthy of all the merit and esteem and acclaim that we can offer. And as we pay them this simple tribute and bow our heads in a moment of silence we also pledge to them our determination to live lives of faithful service down to the end. May they rest in peace.

PRACTITIONER'S PAGE

This page is devoted to the everyday problems of the physician in practice. Members of the Association are urged to suggest subjects for articles which they desire discussed. Members are also urged to submit questions. Each question will be referred to some physician who is qualified to make answer, and if the question involves a subject of general interest, the answer will be printed.

RIBOFLAVIN

Roe E. Rennington, Ph.D., D.Sc.

Professor of Nutrition

Medical College of the State of South Carolina

Following the discovery that yeast which had been heated for several hours would not cure the spastic paralysis of vitamin B deficiency in laboratory animals, but would still promote growth, this thermo-stable growth factor was called vitamin B₂ or vitamin G. It was later identified as a yellowish colored substance present in whey and called lactoflavin, but since this same substance is generally present in a variety of foods and is chemically related to ribose (a sugar), the preferred name is now riboflavin. It has been made synthetically and is now on the market as pure riboflavin.

Concerning the possibility that riboflavin is essential in human nutrition there was no definite information until 1939, when Sebrell and Butler identified the symptoms of riboflavin deficiency in man as: "maceration in each angle of the mouth, lips reddened along line of closure, mucosa appearing thin, shiny and denuded. There was also a scaly, greasy desquamation in the nasolabial folds, on the alae nasi, in the vestibule of the nose, and in a few instances on the ears and eyelids."

These symptoms they say are similar to those previously described as "pellagra sine pellagra." They were not improved by nicotinic acid, even in large doses, but on .025 milligram of riboflavin per kilogram of body weight they disappeared in from 4 to 47 days, usually within three weeks. These authors suggest that we should "revise our concept of clinical pellagra in that the condition may be a mixture of symptoms from deficiencies of nicotinic acid, riboflavin, and thiamin chloride, and that any one may occur alone or in combination with any other. Therefore, in order to avoid further confusion it is suggested that the diagnosis of pellagra should be confined to that

syndrome which responds to nicotinic acid, namely skin lesions, gastro-intestinal lesions, stomatitis, and mental disturbances; that peripheral neuritis which responds to thiamin chloride should be diagnosed as beri-beri; and the lesions described here, which respond to riboflavin, require a new designation." The new designation proposed is *cheilosis* or *cheilitis*, literally an inflammation of the lips.

Sydenstricker later confirmed these observations, and reported further that the earliest symptoms of riboflavin deficiency could be observed in the eye, the outstanding changes being first a superficial invasion of the cornea by capillaries, later the development of opacities. The increased vascularity could be reversed by giving riboflavin, and even some opacities were improved or cleared up. As long ago as 1931 Day reported the occurrence of cataract in rats deprived of vitamin G, and that the cataract could be arrested (but not cured) by adding vitamin G to the diet in the form of dried skimmed milk. It appears that examination of the eye by an experienced observer will be the best means of detecting early results of riboflavin deficiency.

The standard daily protective allowance suggested by the Committee on Foods and Nutrition of the National Research Council ranges from two to three milligrams for adults, down to 0.6 to 1.8 milligrams for children according to age. These allowances are based on rather meager data, and may be revised. Addition of 2 milligrams of pure riboflavin to a low residue high calorie diet resulted in an increased excretion in 24 hours of 600 milligrams, or 30% of the ingested dose. Normal urinary excretion in health or in deficiency is not well established by existing data.

Although the Federal definition of enriched flour provides for the addition of riboflavin, the provision has been temporarily suspended until sufficient supplies of the synthetic product become available. Excellent food sources are liver and kidney, milk and cheese, thin leaved green plants, etc.

SIDELIGHTS OF THE CONVENTION

Driving up to Columbia and noting the marked decrease in the number of cars and in speed of travel on the highway.

Dropping by Fort Jackson to see Col. W. C. Goley and to discuss with him the general affairs of the Medical Recruiting Board of which he is head.

Walking into the lobby of the Columbia Hotel and finding several exhibitors preparing their booths. Also finding C. G. Spivey, Chairman of the Exhibits Committee busily engaged in making the exhibitors feel at home. The work of Dr. Spivey was outstanding and deserving of the praise which he received from medical men and exhibitors alike.

Registering at the desk and finding the staff of the hotel anxious to be of any service.

Attending the meeting of Council on Tuesday morning where many important matters were discussed. One of the main matters being the question of raising the dues to \$10.00 a year.

Registering at the Convention desk where Mrs. Watson, Association Stenographer, was checking on memberships of all who registered.

Finding the first five registrants to be T. H. Pope of Newberry, Wm. Weston, Jr., of Columbia, J. I. Waring of Charleston, Isaac Hayne of Congaree, and W. A. Hart of Columbia.

Watching W. A. Hart, Chairman of Registration and Treasurer of the Columbia Society, joyfully extracting dues from delinquent county and state members.

Smiling over the predicament of one Councilor who had forgotten to pay his dues and who sheepishly forked over the required amount to the lady at the desk. Later finding that one of the members of the Editorial Board of the Journal was likewise involved.

Listening to Bernie Heyward, Chairman of the Scientific Committee, as he listed the final changes which had to be made in the program due to last minute unforeseen happenings.

Sitting in the meeting of the House of Delegates and listening to the various reports. Delighted at the proposal of Robt. Wilson, Jr., approved by a spontaneous burst of applause, which would make it mandatory for all reports to be printed in the Journal before the meeting and thus have the House of Delegates only concerned with the recommendations contained therein.

Expecting to have some fireworks over the proposed increase of dues and surprised to find such a unanimity of opinion for the Association to increase its financial reserves and thus insure more constructive work in legislative and other fields.

Looking over the House of Delegates and noticing in particular: Kenneth Lynch on the front row

with his crutches handy, Dr. J. H. McIntosh in his usual place on the second row, Lawrence Thackston and Wilson Ball in uniform, Claude Sease and Frank Cain handling credentials of delegates at the door, Dr. Geo. Dick, representative of the dentists on the Exec. Com. of the State Board of Health, an interested spectator, Augusta Willis and Hilla Sherriff representing the fair sex.

Noting the fine way in which George Truluck, President of the Association, kept things moving along with the avoidance of any bottlenecks.

Seeing news made when one committee, headed by Fred Kredel, requested its own immediate death.

Realizing how much Buck Pressly really deserved the token of appreciation, in the form of a briefcase, presented him for his loyal and faithful work as State Chairman for Procurement and Assignment Service.

Speaking to Dr. G. Lombard Kelly, Dean of the Univ. of Georgia School of Medicine, who was welcomed as a fraternal delegate from Georgia.

Watching the many friends of Billy Smith congratulate him upon his election to the position of President-Elect for the coming year. Billy Smith was nominated by Lesesne Smith and the nomination was seconded by Hugh Smith. Lest the Smith family be accused of political and familial conniving, let it be stated that, Billy, Lesesne, and Hugh are the best of friends but that they live in different towns and are not connected to each other by blood.

Attending the delightful dinner given by George Truluck in honor of all the Past Presidents and attended by them and the officers of the Association. Hearing Adam Hayne give his unique definition of a protoscope.

Turning down numerous invitations to various rooms on Tuesday evening so as to get a good night's sleep in preparation for the next day's activities.

Finding physicians coming in on Wednesday morning in larger numbers than anticipated. Registrant No. 100 being William Weston of Columbia, No. 150 M. L. Nelson of North, No. 200 G. E. McDaniel of Columbia, No. 300 F. H. Pruitt of Fort Jackson, and No. 350 J. L. Powe of Hartsville.

Appreciating the appearance and the scholarly talk of Dr. Joseph Hyde of Charleston, Exchange Speaker from the South Carolina Pharmaceutical Association.

Listening to the splendid discussion of the Sulfonamides by Dr. Halsey Barker of Baltimore, and hearing many comments on his masterly presentation.

Marveling at the ease with which Mrs. Walter Wallace, convention stenographer, took down the words of the speakers.

Appalled by the number of deaths reported by the Memorial Committee of physicians who had passed on during the past year and deeply grate-

ful for the tribute paid them by the Pastor of the Presbyterian Church in Orangeburg (printed elsewhere in this Journal).

Feeling a lump in the throat during the simple ceremony in which the Columbia Medical Society, through O. B. Mayer, presented a silver pitcher and goblets to its beloved member, Dr. J. H. McIntosh, who has recently completed 54 years of medical practice, 40 of which have been spent in Columbia. Realizing anew that the greatest gift which Medicine can contribute to the world is the composite of the lives of those who are true physicians—and Dr. McIntosh has been and still is a true physician.

Sitting by M. H. Wyman at the annual banquet of the alumni of the Medical College of the State of South Carolina and being served late since the crowd was 75% larger than anticipated. Dr. Jim Fouche was elected by acclamation as the next President, succeeding J. E. Boone of Columbia.

Chatting again with Col. Goley and finding that physician after physician had been in to confer with him concerning the army and its immediate needs for medical officers and the desirability or possibility of entering service.

Watching Bernie Heyward round up his experts for the Question Box.

Wondering whether the Question Box would be a success or a flop and glad to see that it was well presented and well received. Questions flying thick and fast while each expert sat on the edge of his chair wondering what the next question would be and what he would say if it fell to his lot to answer it.

Noting that Warren White brought along an extra vertebral column so that he might more graphically discuss W. R. Mead's excellent paper on Backache.

Attending the Annual Banquet and finding it one of the most pleasurable social affairs ever encountered at a medical meeting, and believing that the other 225 who attended were of the same mind.

Watching William Weston, Sr. preside with his usual grace as toastmaster, as he and Tom Pitts between them presented the following for recognition: George Truluck, President of the Association, and Mrs. Truluck; Mrs. Tom Pitts; Warren White, Vice-President; W. A. (Billy) Smith, President-Elect; Frank Cain, Chairman of Council; Julian Price, Secretary; Gen. Dozier, Adjutant General of S. C., and Mrs. Dozier; Col. Scott, Commanding Medical Officer, Fort Jackson; Col. W. C. Goley, Medical Recruiting Board of S. C.; Col. E. H. Barnwell, Medical Director of Selective Service for S. C., and Mrs. Barnwell; Past Presidents of the S. C. Medical Association J. H. McIntosh, J. P. Young, Adam Hayne, and W. L. Pressly; George McCutchen, Chairman of Arrangements Committee; Dr. Hines Roberts of Atlanta, Guest Speaker; and Col. David N. W. Grant, Chief Air Surgeon of the Army, and Mrs. Grant.

Hearing Col. Grant deliver a splendid paper on Military Aviation which was well received.

Sitting on the sidelines after the banquet and observing that age may tell on some individuals but that it did not prevent many gray-haired or bald-headed physicians from exercising their light and fantastic abilities upon the ball room floor or from visiting the little room next door.

Expecting to see the usual faithful few at the meeting on Thursday morning and instead finding the largest Thursday crowd in recent Association history on hand to hear Hines Roberts of Atlanta give his well prepared and well presented talk on Septic Meningitis.

Watching the crowd increase until the hall was well over three quarters full at the hour of noon.

Standing with every one else in the room when General Hershey was presented to the Association by Gen. Holmes Springs, Director of Selective Service for S. C.

Noting the intent look on every face as General Hershey spoke, building his talk around the key sentence, "Wars are not time of convenience." Appreciating the tribute which he paid the South Carolina physician when he said, "The trouble in South Carolina is not that of getting you to go into the army, but rather that of keeping enough physicians in the state to keep medical work going at home."

Having a final conference with Tom Pitts, President for the coming year, concerning the work which lies ahead and concluding that under his leadership the Association will be well led in the trying days ahead.

Telling friends good-bye and coming to the conclusion that this meeting was the best meeting of the Association which this writer had ever attended because; (1) The physicians of Columbia were such good hosts, (2) F. E. (Skeeter) Zemp and his committee had made such good preparations for the meeting, (3) Barney Heyward and his committee had secured such good speakers, (4) in spite of the war and its attendant difficulties, so many physicians attended the meeting—approximately one third of the physicians in S. C. were present, and, above all (5) the physicians of South Carolina are such a friendly group of individuals that to know them is to enjoy them and to love them.

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Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 449

Student W. K. Kerr (presenting):

Present illness: 51 year old white carpenter seen in out-patient clinic on 10-31-41, complaining of bleeding from the mouth for two weeks. The patient was of the opinion that the bleeding was from his teeth because they were loose and painful and because every time he would eat his teeth would hurt and his mouth would become filled with blood. At times he would only spit out blood-tinged sputum and at other times would spit out a large amount of bright red blood. He did not go to bed until forced to do so by weakness. About six weeks prior to admission he fell and hit his chest and after that time complained constantly of substernal pain. About 5 weeks prior to admission he first felt as if he had fever and noticed this almost every evening. No nausea or vomiting, no change in bowel habits, no urinary disturbance. He had never noticed that he bruised easily or bled longer than ordinary.

Past History: Always considered himself to be healthy. For several years he had been a heavy periodical drinker but denied having had any liquor since September 1, 1941. Several times when on an alcoholic debauch he had noticed bleeding from the rectum which subsided spontaneously. He had had a cough productive of white sputum for several years and attributed this to cigarettes.

Family History: Mother living but in poor health due to arthritis. His father is living and has had a "stroke." One brother is living and has had a "stroke" and one brother is living and well. One only sister died at 13 years of suspected tuberculosis. One sister-in-law has an arrested case of tuberculosis. His wife is in good health and all five of his children are healthy.

Physical Examination: T. 98. P. 100. BP. 120/90.

Showed a weak, chronically ill white man who appeared to be older than his stated age and who cooperated poorly because of his weakened condition. Head and neck—pupils normal, bilateral arcus senilis, no jaundice. The nasal mucosa was moderately congested and there was a muco-purulent discharge. The lips were covered with dried blood. Several teeth were missing and all of those present were carious and loose. There was blood oozing from around the lower right 3rd molar tooth. The gums did not appear to be soft. The throat and neck were normal. No lymphadenopathy. Chest—emphysematous type with moderate limitation of respiratory excursion. Patient seemed to be more comfortable in upright position. Lungs—resonant throughout to percussion. Breath sounds over the

right lower lobe were of a higher pitch and in this area there were numerous fine crackling rales and also a faint respiratory wheeze. Heart—enlarged to left, PMI not located. No thrills, shocks or murmurs. Peripheral arteries moderately sclerotic. Abdomen—no viscera palpated; no tenderness or masses. Examination of the abdomen was not satisfactory. Extremities normal. Rectal—there were a few small internal hemorrhoids. Prostate was enlarged, of normal consistency, slightly tender.

Laboratory Findings: Urinalysis 10-13-41. Sp. Gr. —1.013; Alb. 4 plus; WBC 4/hpf; RBC 3/hpf; f. g. casts 3 plus. c. g. casts 1 plus.

Blood 10-14-41. RBC 2,060,000; WBC 9,700; Hb. 7.25 gm; Polys. 68.5%; Lymphs. 24.5%; Myelocytes 7%. Coagulation time—3.5 min. and 2 min. Bleeding time—11 min. Platelet count—82,000 and 63,000. Sputum negative for T. B.—Urea Nit. 102 mg. Creatinin 3.09 mg.

Hospital Course: The patient appeared to be very weak and restless when admitted but was able to walk. There was a steady oozing of blood from his mouth and at times the blood was actually dripping. He coughed frequently and vomited once. On the following morning he seemed to be exhausted but attempted to get out of bed. He became stuporous and gradually lapsed into a coma, and died at 5:20 P. M. on 10-14-41.

Dr. W. H. Kelley (conducting): Mr. Snoddy, will you discuss the cause of this man's death for us?

Student Snoddy: In an analysis of this case, the history seems to be of little or no importance except for the bleeding from the mouth. The physical examination points to the mouth and possibly the lungs as the sites of pathology. The laboratory findings draw our attention to two conditions—a possible blood dyscrasia and some impairment of renal function. It is difficult to fix all this together and it is practically impossible to substantially support any diagnosis that you may make. I was able to find only one condition in which all the symptoms and laboratory findings that we have here could be present. This disease is multiple myeloma. In this condition there is albuminuria, non-protein nitrogen retention with a low blood pressure, progressive anemia, abdominal bleeding and the appearance of some abnormal cells in the blood smears. The patient also usually has persistent pain, often in the sternal region and progressive weakness. All these findings were present in this case and it is the one condition I can find which embodies all these characteristics. This patient was also in the right age group, the peak of incidence of multiple myeloma occurring at 55. I am unable to explain the kidney

picture on the basis of a chronic glomerulonephritis. As regards leukemia which is suggested by the abnormal blood picture, the absence of an enlarged spleen or any evidence of lymphadenopathy certainly rules against it.

Dr. Kelley: Well, that is a starting point. Can you explain all his symptoms on the basis of multiple myeloma?

Student Snoddy: I can explain them better on that basis than on any other.

Dr. Kelley: What about the rales in his chest and the coughing up of blood? What do these bring to mind?

Student Snoddy: Possible tuberculosis of the lungs. If he had pulmonary tuberculosis he may have also had renal tuberculosis which might account for some of his kidney findings, but there is nothing definite. Of course, the hemoptysis might be due to pulmonary metastases from the myeloma.

Dr. Kelley: What findings usually lead to the definite diagnosis of multiple myeloma?

Student Snoddy: The X-ray is the usual means of making a positive diagnosis. Bence-Jones bodies occur in the urine in many of the cases, but may also be present in other diseases.

Dr. Kelley: Do you think the bleeding from the gums was due to the deficiency in platelets?

Student Snoddy: Yes, I do. The deficiency of the platelets being due to the wide-spread invasion of the active marrow by the myeloma.

Dr. Kelley: This man's bleeding time was 11 minutes, and he had been a heavy periodic drinker. How can you dismiss Scurvy here?

Student Snoddy: I don't believe you can.

Dr. Kelley: Well, there are some other things beside deficient platelets or Scurvy that might explain his bleeding. Mr. Mixon, can you think of some other things?

Student Mixon: Well, hemophilia can cause bleeding, but deficient platelets and prolonged bleeding time are certainly not characteristic of that disease. Aplastic anemia is a possibility, but his blood picture is not definite for that. Terminal uremic states also frequently produce hemorrhage. Vitamin K deficiency is also associated with hemorrhagic manifestations.

Dr. Kelley: If this bleeding was due to uremia, do you have any idea what the underlying disease might be?

Student Mixon: I tend to favor glomerulonephritis, as two-thirds of the patients with the chronic form of this disease develop bleeding in the terminal stages, but with a normal blood pressure, I certainly hesitate to make that diagnosis.

Dr. Kelley: How do you feel about multiple myeloma?

Student Mixon: I would have to have other positive laboratory findings to make that diagnosis.

Dr. Kelley: (demonstrating X-ray films) — Mr. Snoddy, what would you expect the X-rays of the

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skeleton to show in multiple myeloma?

Student Snoddy: I would expect to have multiple areas of decreased density scattered through the bones. I certainly see no definite evidence of multiple myeloma here.

Dr. Kelley: Does anyone else want to add something to this discussion?

Student Mood: Was a determination of the serum proteins made?

Dr. Kelley: Unfortunately, it was not. It would have been very important in establishing the diagnosis of multiple myeloma, as there is usually hyperproteinemia with elevation of the globulin fraction.

Dr. Kalayjian: From study of the X-rays of the chest, I do not think the man had any sort of tuberculosis. I see no evidence of tuberculosis and in that respect I want to say that I rarely see renal tuberculosis or any other type that does not have an antecedent pulmonary focus. I also see no evidence of multiple myeloma in these films and cannot see how he would have had this disease or a separate or associated severe anemia for any length of time without the bones appearing thinner or more rarefied than they do here.

Dr. Lynch: (demonstrating gross specimens): This is a case of multiple myeloma involving the skull, clavicles, sternum, ribs and vertebrae. Here you see a segment of rib whose marrow cavity is thick and filled with dark grayish-red pulpy tissue. This is the medial end of the left clavicle which shows a large cystic space partially filled with similar material. At autopsy the ribs were of the consistency of cardboard and cut easily with a knife. The clavarium showed multiple punched-out rarefied areas.

Multiple myeloma is a tumor arising in the bone marrow, usually of flat bones containing the active red marrow and characterized by the multiplicity of its lesions. It is invariably fatal in about two years.

(Microprojection): The tumors are composed of sheets of plasma-like cells showing the characteristic spoke-like arrangement of the nuclear chromatin. This tumor is quite vascular and you can see areas of hemorrhage scattered through the tumor tissue.

This patient also had chronic bronchitis and a moderate degree of bronchiectasis with associated

pulmonary fibrosis. This state of affairs accounted for the pulmonary physical signs and the hemoptysis.

The kidneys showed a chronic pyelonephritis and there was some evidence of tubular degeneration and possible blockage probably due to the effect of the Bence-Jones bodies.

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Honor Roll

A letter has been sent to every member of the Association requesting that a four dollar (\$4.00) voluntary contribution be sent in to the Association Treasurer so that the work of the Association may be carried on more efficiently and may be expanded. This has been done in accord with action taken at the last meeting of the House of Delegates.

The response to the letter has been most gratifying not only because of the number of checks received but because of the number of gracious and appreciative notes which have accompanied the money.

Those who have contributed, in the order in which the checks were received, are (as of June 5, 1942):

Dr. Robert Wilson, Sr., Charleston
 Dr. Wm. A. Smith, Charleston
 Dr. D. L. Smith, Spartanburg
 Dr. W. L. Pressly, Due West
 Dr. J. N. Holtzclaw, Greenville
 Dr. J. I. Waring, Charleston
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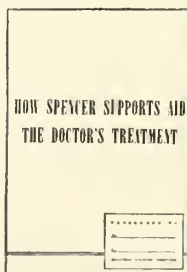
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THE JOURNAL

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NUMBER 7

Traumatic Injuries of the Chest*

FRANK P. COLEMAN, M.D. AND
J. GORDON SEASTRUNK, M.D.

In war time, the chest offers a good target and trauma to this region is deserving of the attention given it today. Recent experiences of Ranson¹ in the Sino-Japanese War during 1937, and Crafoord's² experience with wounds of the chest, substantiate this opinion. These authors found that 30 to 50 per cent of all deaths on the field were due to wounds of the chest.

In civil life, injuries of the chest deserve more consideration by the general practitioner and general surgeon; such lesions must of necessity be managed by these members of our profession. It is true that four out of five civil injuries of the chest will recover with complete rest, sedatives, and watchful waiting; however, this apparent good prognosis encourages us to pursue this course in all the cases hoping that our particular patient will not be the unfortunate victim. Though the treatment is usually non-surgical, the proper management is at times of extreme urgency, and the outcome, whether satisfactory or otherwise, will depend upon the handling of the immediate emergency and proper first aid treatment. Surgical interference as the primary treatment is indicated in a small group of chest injuries, but it is important to recognize this group, and one should not wait until the patient is moribund before resorting to operative attack.

Injuries of the chest encountered in every day practice and in our municipal hospitals result primarily from stab wounds, gunshot wounds, and severe crushing wounds. Wounds of the heart will not be discussed.

Trauma to the chest results in certain manifestation of the injury which directs our attention to the acuteness and seriousness of the situation. The mechanism, disturbed physiology, and management of these sequellae will be considered.

Shock

The development of shock in an individual following trauma to the chest is an expected complication. Suitable treatment should be instituted immediately, and this state of affairs should be overcome, if possible, prior to any other treatment. Debridement of wounds should be delayed until shock has been controlled unless the wound (open pneumothorax or severe hemorrhage) is the contributing factor. Morphine should be given freely unless the patient obviously has a low vital capacity. Large doses of morphine are dangerous in patients with extremely lowered vital capacity. Typing of blood and suitable donors should be obtained for all patients with severe chest injuries. Transfusions are given freely without fear of raising intrapleural pressure and exciting hemorrhage, if shock is present. At times, it is difficult to differentiate between shock and a rising intrapleural pressure precipitated by the accumulation either of blood or air in the pleural cavity. In this case, it is better to do a transfusion and then

*Presented to The Piedmont Post-Graduate Assembly, Anderson, South Carolina, (September 9-11, 1941) and Spartanburg County Medical Society, Spartanburg, South Carolina, (January 26, 1942).



FIGURE 1

Simple method for decompressing tension pneumothorax. Underwater drainage permits continuous escape of air, and safety valve prevents the development of too high negative pressure when suction becomes necessary. (Insert) Method of anchoring needle to the chest wall.

decompress the pleural cavity immediately. If air was the responsible agent, all will be well. On the other hand, if blood is rapidly accumulating and is giving cause for both shock and a rising intrapleural pressure, operative intervention is urgently demanded.

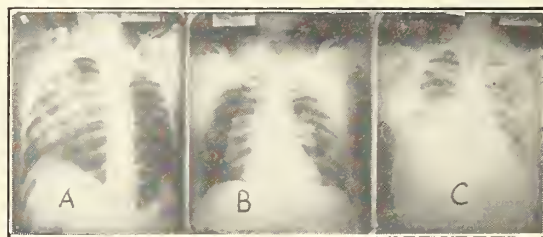
If shock develops 48 to 72 hours or longer following trauma to the chest, it is wise to look carefully for the occurrence or recurrence of hemorrhage into the pleural cavity.

Fractures of the Bony Thorax

A simple rib fracture is not a serious manifestation of a chest injury, and the seriousness of multiple fractures parallels the extent of disturbed physiology. (See Case I) If multiple rib fractures are present and an unstable bony cage results, immobilization by a firm circular adhesive dressing should be instituted. Frequently, the urgency of treatment is precipitated by a bony spicule being driven into the lung parenchyma producing either a pneumothorax or a hemothorax. Fragments of bone driven into the lung by a penetrating agent should be removed by open operation. Immobilization of the thorax by adhesive lessens the pain produced by simple uncomplicated rib fractures. Separation of the cartilages from the sternum in severe crushing wounds does occur, and elevation of the sternum by suitable skeleton traction will be demanded.

Emphysema

Air in the subcutaneous tissue following an injury to the chest may develop through air entering the wound of entrance at the time of the accident; however, the most common source is from injury to the tracheobronchial tree, the lung, and the esophagus. Subcutaneous emphysema implies, as a rule, injury to one of these three structures. This complication seldom is of much clinical significance in that usually the lung is injured permitting a small amount of air to escape into the chest wall before the lung collapses and seals off the leak; however, esophageal and tracheal injuries demand immediate operation. These injuries and injury to the large bronchi precipitate a mediastinal emphysema. Air escapes along the fascial planes of the mediastinum and neck. The great vessels become compressed, and relief is obtained by making incisions above the clavicle and opening the deep fascial planes. It is possible for air to leak into the chest wall and spread up into the neck and down into the mediastinum; however, mediastinal emphysema of this character is usually not of a serious nature. In certain cases of tension pneumothorax a marked generalized interstitial subcutaneous emphysema develops; however, after correction of the pneumothorax, there is no further increase in the emphysema and the marked swelling subsides. Generalized emphysema alarms the family, but neither the physician nor the patient.



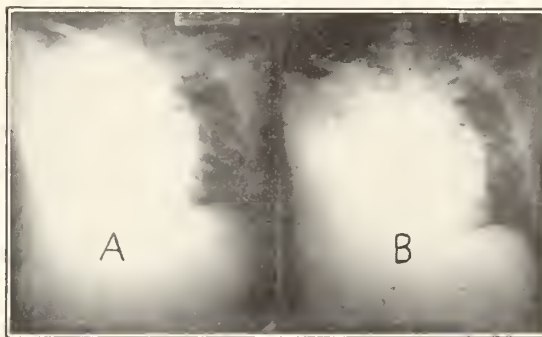
CASE I

Severe crushing injury of chest complicated by pneumothorax. (A) and (B) on admission—11 ribs fractured on the right and 7 on the left. 12 hours later tension pneumothorax developed on right requiring decompression by the simple apparatus illustrated in Fig. 1. Chest immobilized by circular tight adhesive dressing for 2 weeks. (C) 2 weeks later showing evidence of hemothorax in right base which was subsequently aspirated.

Pneumothorax

Trauma to the chest may produce a pneumothorax either by establishing a communication between the pleural cavity and outside world by way of the thoracic wall (open pneumothorax) or by way of the bronchial tree (closed pneumothorax). In the former a defect exists in the chest wall permitting air to enter the pleural cavity. In the latter the lung or trachea must be injured in order for a pneumothorax to develop. Irrespective of the type of pneumothorax, certain changes take place.

The pleural cavity is a potential space with pressure reading of around minus 4 to minus 8 cm of water. In an open pneumothorax air enters the pleural cavity and atmospheric pressure replaces this highly negative pressure. The mediastinum shifts to the opposite side on inspiration and back toward the midline with expiration (mediastinal flutter). The collapsed lung expands with expiration and collapses with inspiration, and rebreathing of air across the trachea takes place. The size of the opening in the chest wall compatible with life depends upon the vital capacity of the individual, the state of the pleural cavity (absence or presence of adhesions), and the mobility of the mediastinum. A patient with a low vital capacity tolerates an open or closed pneumothorax poorly. Such an injury (open pneumothorax) comprises only a small percentage of the chest wounds in Civil life; however, no injury deserves more immediate attention. The hole in the chest wall must be plugged. A wet



CASE III

Penetrating wound of chest (gunshot). Massive hemothorax, left. (A) 8 days after injury. Patient moribund resulting from anoxemia and shock. (B) 12 days after injury following aspiration of 2500 cc of blood. Note the persistent massive hemothorax. 2 days later trocar drainage with removal of 5000 cc of blood. Bleeding persistent. Immediate thoracotomy revealed main pulmonary artery to left lower lobe severed, necessitating left lower lobe lobectomy under local anesthesia. Death occurred 6th post-operative day from encephalopathy due to previous prolonged cerebral anoxemia.

towel can be applied, or better still, the skin can be roughly approximated. No delay should take place in transporting the patient to the hospital where adequate debridement and closure of the wound in layers can be carried out. Chemotherapy should be liberally used locally and systemically. The injured lung should also receive attention at the time of operation.

Closed internal pneumothorax is a frequent complication, but carries very little danger unless a tension pneumothorax develops. In this latter condition, air readily enters the pleural cavity from the bronchial tree and due to a valve action the air cannot escape or retreat into a bronchus. The pressure mounts and far exceeds atmospheric pressures. The same disturbance of the cardio-respiratory physiology develops which will be described under massive hemothorax. Air and blood are commonly found in the pleural cavity together following chest injuries, but such a state adds no increased hazards to recovery. In the average case of internal pneumothorax there is no need to aspirate the air, for the opening will seal off in 48 hours, and in a few days the lung will have re-expanded. On the other hand, a tension pneumothorax must be relieved. The patient is in acute respiratory distress. The blood pres-



CASE II

Penetrating wound of right chest (gunshot). (A) Moderate hemothorax right 4 hours following injury. (B) 7 days after injury. 1500 cc of blood has been aspirated on 3 successive days. The first thoracentesis fourth day after injury. Air is now replacing a portion of the aspirated blood. (C) 20 days after injury—800 cc of additional blood removed on the 9th and 14th days after injury.

sure is low because the great vessels and auricles are so compressed that cardiac filling and output are markedly decreased. A picture of shock is present were it not for the manifestation of the acute respiratory symptoms. The physical signs are obvious. The relief obtained by simply inserting an 18 gauze needle into the pleural cavity is spectacular. As a rule, connecting this needle to a glass rod under water is all that is needed, for in 48 hours the wound in the lung seals off and re-expansion takes place. (See Fig. 1 and Case I) Where a low vital capacity exists prior to injury and where the communication between the lung and pleural cavity is fairly large, simple decompression with a needle may not suffice. In such a case water suction can be applied to the illustrated apparatus and air can be removed as fast as it escapes into the pleural cavity.

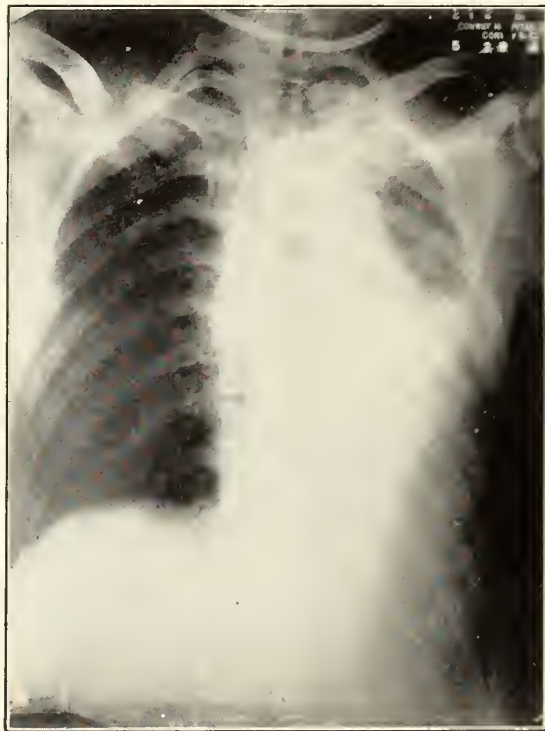
Hemothorax

Some degree of hemothorax results from severe crushing and penetrating wounds of the chest. The extent of hemorrhage depends upon pre-existing conditions in the pleural cavity (presence or absence of dense adhesions between the two layers of pleurae), the extent and site of injury to the lung, and the circulatory system involved in the laceration. If the laceration of the lung occurs near the hilus, large vessels are encountered and the hemorrhage will not only be massive, but it will likely continue. An intrapleural hemorrhage secondary to trauma usually results from injury to the lung and the bleeding arises from the pulmonary circulation where the pressure is approximately one-sixth of that of the systemic circulation. Injury to the internal mammary artery and intercostal arteries results in hemorrhage from the systemic circulation, and control of hemorrhage from this source is more difficult requiring operative interference. Fortunately, injury to these vessels is not frequent and in most instances the bleeding is from the lung.

The presence of what appears to be unclotted blood in the pleural cavity, days or weeks following an injury, has influenced some clinicians in believing that blood making up a closed hemothorax does not clot. It is im-

material to this discussion whether blood first clots and then becomes defibrinated by the whipping action of the heart, mediastinum, and diaphragm, or whether the pleurae produces an anti-coagulant preventing clotting. Irrespective of the view taken, numerous examples of large hemothorax where blood has clotted will be encountered by clinicians treating chest injuries. Slow bleeding into the pleural cavity as a rule results in a fluid hemothorax, while rapid bleeding results in a tendency to clot formation.

Once a hemorrhage into the pleural cavity has taken place, the normal cardio-respiratory physiology is attacked from two angles: a progressive decrease in blood volume results, and a gradual rise in the intrapleural pressure takes place. It is difficult to differentiate which factor is predominating. Hemorrhage results in a fall in blood pressure, decrease in cardiac output, and shock. Intrapleural pressure results in a progressive collapse of the lung with a decrease in vital capacity, interference with



CASE IV

Massive atelectasis left lung, 48 hours after severe crushing wound of left chest. Cartilages 2, 3, 4, 5, and 6 were separated from sternum. Complication relieved by posture (turning patient on right side) and voluntary cough with chest wall immobilized.

return of venous blood to the heart thus decreasing the cardiac intake and output, increased venous pressure, and a fall in the blood pressure. In a rising intrapleural pressure which results from either bleeding or a pneumothorax, the respiratory symptoms predominate and cyanosis is prominent. The involved side remains in a position of full expansion with forced expiration. In acute hemorrhage, shock, dyspnea, and air hunger are late terminal findings. If the accumulation of blood in the pleural cavity has been slow, hemoglobin determination will aid in determining whether the picture is that of extensive bleeding or that of a high intrapleural pressure. If a differentiation cannot be made, it is wise to aspirate the pleural cavity.

Treatment: The immediate management of a hemothorax is based upon the disturbance of the normal cardio-respiratory physiology, and it may be classified as follows:

1. Minimal or moderate hemothorax.
2. Massive hemothorax (progressive and abundant bleeding).

In the first group, watchful waiting can be relied upon. The physiology of the chest is not seriously disturbed. After the initial treatment, and perhaps after days, continued bleeding will take place in the pleural cavity, and some of the patients in Group I will be treated as in Group II. The patient is placed in bed in the Fowler's position. Immediate shock is treated in the usual manner. The blood is typed for a transfusion, and after recovery from the shock the wounds of entrance and exit are carefully debrided and closed. A careful record is kept of the blood pressure every hour, and morphine is liberally given unless the vital capacity is low. It is rarely necessary to use an oxygen tent. After 72 hours, a part or all of the blood is aspirated from the chest. If the hemorrhage is a minimal one, we do not replace the blood with air. If a moderate hemorrhage is present, 300 to 1000 cc of blood is aspirated and replaced with an equal volume of air. Aspirations are then continued every 24 hours and further air is given when aspiration yields as much as 300 cc of blood or if there is evidence of further bleeding into the pleural cavity. (See Case II). If, following

repeated aspirations, an incomplete absorption of a relatively large hemothorax with a deposit of fibrin takes place, we believe that the pleural cavity should be opened and the organized hematoma evacuated. Unless the patients with such a complication are treated by surgical removal of the organized hematoma, crippling deformities of the pleurae results. They are prone to the development of empyema and to the development of secondary chronic pulmonary disease.

In Group II progressive and abundant bleeding into the pleural cavity results in spite of morphine and immobilization of the patient. There is an aggravation of all symptoms. A surgical emergency is present. It may be necessary to remove large volumes of blood from the pleural cavity which can be filtered and returned to the systemic circulation while preparations are being made for a thoracotomy. The bleeding point must be ligated, and a lobe or lung may need be sacrificed. (See Case III). If bleeding is active from the wound of entrance, an injury to an intercostal vessel should be suspected and exposure with ligation is in order.

Open operation should seriously be considered in certain cases of minimal or moderate hemothorax which are accompanied by an enclosed projectile or an embedded fragment of bone.

Infection

In the treatment of an injury to any organ one of the most important fears lurking in the background is the possibility of infection developing. Chest injuries are no exception to this rule, and the proximity of the organs of the thorax to the oral cavity, and their communication by way of the bronchial tree with the mouth, adds considerably to the danger of an associated infection. Oral hygiene deserves rigid attention and will do much in helping to avoid serious intrapulmonary lesions. Wounds in the skin from projectiles, no matter how small, must be debrided thoroughly and closed. Asepsis must be rigidly practiced in aspirating the pleural cavity. Pleural fluid should be cultured repeatedly for evidence of infection and drainage instituted at the proper time. Cough should be encouraged and the

tracheobronchial tree kept clear in order to avoid atelectasis with the subsequent development of pneumonia. In all penetrating wounds, tetanus and gas antitoxin should be given. Chemotherapy should be used liberally for both preventive and curative purposes. Sulfathiazole is used both locally in the wound, and orally. We give sulfathiazole until the desired blood concentration has been obtained. Organized hematomas of the pleural cavity must be evacuated in order to avoid an empyema and latent intrapulmonary disease. We subscribe to Monod's³ indications for operative intervention in pleuro-pulmonary wounds in order to avoid infection: (1) when the fragment of a shell is embedded in a superficial juxta-pleural site; (2) when the parietal wound is accompanied by a fracture; (3) when the projectile is a large and an embedded one, either extrepleural or intrapleural; and (4) when irregular and massive lacerations of lung tissue has resulted.

Atelectasis

If a bronchus is obstructed to the lung or to a segment of the lung, air is absorbed from that portion of the lung or lobe distal to the obstruction. A massive or localized area of atelectasis results. The heart and mediastinum shift to the involved side accompanied by a

rise in the diaphragm. (See Case IV). This pathological development is not a true manifestation of the injury, but it is precipitated by the inability of the patient to raise the bronchial secretions effectively. Cough produces severe pain and the reflex is suppressed. Secretions stagnate obstructing the inflow of air and atelectasis results. This complication is common in severe crushing wounds of the chest. Treatment consists of emptying the tracheo-bronchial tree of the retained secretions either by posture or most effectively by bronchoscopy.

Conclusion

The successful management of traumatic injuries of the chest depends upon a knowledge of the thoracic physiology, and the recognition of the clinical manifestations of the disturbed physiology.

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JULY, 1942

"FILL 'ER UP"

The physician still holds a position of special privilege. So long as new tires are available for any of the civilian populace, so long as new cars may be purchased, so long as gas is sold with ration cards, the needs of the physician are recognized as all important and his demands for the highest of priorities are granted.

With privilege comes responsibility, and this should ever be remembered by the physician. The United States Government and the man in the street both recognize the position which the practicing physician occupies and are glad to grant him special privilege. Not to abuse that privilege becomes the responsibility of the physician himself and of physicians as a group.

The individual physician should be extremely careful in the use of his car or cars. He should make a clear line of demarcation between professional riding and pleasure trips. To protect himself and his colleagues from criticism, he should make demands for gas and tires and new cars which are within both the letter and the spirit of the law.

As a group, physicians should plan future activities with care. County medical society meetings ought to be continued. However, we doubt the wisdom and advisability of continuing the annual and semi-annual meetings of district medical societies since they entail a relatively large amount of travel. District society officers might well consider postponement of meetings for the duration of the rubber

shortage. Whether the usual type of state association meeting should be held next spring or whether only a business session of the House of Delegates will be preferable will have to be determined in due time.

Whether to "fill 'er up" has been a question of the pocketbook alone for physicians in the past. From now on it must be a question of money and—conscience.

THE HONOR ROLL

Beginning in last month's issue of the Journal and continuing in this and subsequent issues is the "Honor Roll"—a list of those members who have sent in a voluntary \$4.00 contribution toward the work of the Association for this year.

At the head of this list should stand the name of Doctor David B. Jackson of Greer and as a token of his right to hold this position we print the letter which he sent with his contribution.

"Dear Doctor,

"Am well on my 85th year of life and have been practicing medicine for 56 years. Am enclosing P. O. money order for \$4.00. If I had that amount *only* I would send it. As I see it the medical profession has been beset with many unjust deals and now the very existence of the profession is assailed with destructive intent."

Yours fraternally,
David B. Jackson"

Those of us who are younger salute the spirit of this octogenarian and utter a fervent plea that when we reach his mature age we will still be as young in spirit as he.

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 Dr. J. R. Howell, Aiken
 Dr. J. T. Assey, Jr., Georgetown
 Dr. C. H. Epting, Columbia
 Dr. E. C. L. Adams, Columbia
 Dr. G. M. S. Roof, Columbia

Broad Oaks Sanatorium

MORGANTON, N. C.

A private Hospital for the treatment of Nervous
 and Mental Diseases, Inebriety and Drug
 Habits. A home for selected Chronic Cases

JAMES W. VERNON, M.D., Supt. and Resident Physician.

THE A. M. A. MEETING

(A Travelogue)

Tom Pitts called me on Friday morning. "Joe Cannon finds he will be unable to go to the A. M. A. meeting in Atlantic City and we want you to go as his alternate to the House of Delegates. How about it?"

It didn't take me long to make up my mind. I had always wanted to go to a meeting of the A. M. A. and I had always wanted to sit in on one meeting of the House of Delegates to see just what they did and how the wheels turned around. Here was a chance to kill two stones with one bird.

Deciding to go by the Seaboard which had a better schedule than the A. C. L., I caught the bus for Camden on Sunday afternoon. Every physician who has ever advised—with nonchalance—his patient to come back to see him on the bus, ought to take such a ride. By the time we left Florence there was only standing room, and when we left Darlington even that was a premium. But they kept on packing them in and had passengers everywhere but on the radiator by the time we left Hartsville.

Carl West met me at the bus station in Camden and ran me out to his house for a little visit. We discussed the situation in general and the medical situation in Kershaw county in particular.

The train finally arrived and I soon found Tom and Mrs. Pitts with whom I made the trip on up. Also on the train was Frank Owens of Columbia.

Arriving in North Philadelphia, we were forced to wait an hour for the train to Atlantic City. A large number of physicians from all over the country were on the station platform with us. Here and there one could hear discussions of medical affairs and occasionally one heard speculations concerning the possibility of being bombed in a token raid.

The House of Delegates was already in session when we finally arrived and registered. What had transpired was routine stuff and we missed nothing of consequence. The Credentials

Committee was on its toes and no one could secure his official badge without all of his ducks being properly in line.

At this point it might be well to give my impressions of the House of Delegates and its manner of working. It is presided over by a permanent speaker, Harrison Shoulders, who handles the business with tact and efficiency. The Speaker has considerable power in that he is allowed to appoint the standing committees and in the hands of an unscrupulous individual this might be highly dangerous. Most of the Committee reports have been printed in advance and this saves a great deal of time. All matters which come up, whether in the form of committee reports or as new business, are referred to these standing committees. These committees meet at specified times and places and any member of the House is entitled to appear before them to express his views on a given subject. In this way much of the argument which would otherwise be given on the floor of the House is taken care of in the committee rooms. Ample opportunity is given for discussion on the floor of the House, however.

The committees are appointed at the beginning of the meeting and report back to the House as their reports are completed. William Weston was a member of the Committee on Amendments to the Constitution and Tom Pitts on the Committee of Reports of Officers of the Association.

By and large, however, the policies and activities of the Association are carried on by the Board of Trustees (which corresponds to our State Council) and this body really dominates the Association. To be sure, the House of Delegates elects the members of this Board and can direct or over-ride its activities, but that it hesitates to tamper with its work to any extent was evident.

I made one observation which confirmed my previous impression—the vast majority of the Delegates were old or older men who had

served in the House for a period of years. (I have no proof but I am sure that I was the youngest man present and that there were very few under fifty). As a result, changes in the A. M. A. are very slow in being made and the actions which are taken are, by and large, the results of conclusions reached by the older men in the profession. Many with whom I talked seemed to think this wise, but personally I believe that a much better cross section of the medical opinion in this country could be reached if at least a third of the Delegates were men under fifty—and that the profession at large could be better satisfied if some limit was placed on the length of time which a physician could serve as a Delegate.

The only matter which evoked much discussion in the House on Monday morning was that of prostitution. After considerable debate, the House finally passed a motion condemning as unethical those physicians who performed examination and gave health certificates to those who are known to be commercial prostitutes.

Monday afternoon was devoted to the meetings of committees. I spent the time getting myself settled, walking down the boardwalk and going into the Auditorium where the main meeting was held. Also dropped by a toy shop to do a little shopping—What Daddy could go home without a few packages.

Monday evening the House of Delegates and distinguished guests were given a dinner by the New Jersey State and the Atlantic City medical societies. It was one of the most delightful banquets which I have ever attended and the hosts are to be congratulated for making it so. Seated at our table were: Ross McElwee of Statesville, N. C., Tom Pitts, Lloyd Noland of Alabama, William Weston, Alfred Walker of Birmingham, Wm. Draper, U. S. P. H., James Paullin of Atlanta, Col. J. S. Simmons, U. S. A., W. C. Davison, Duke.

Music was furnished by the Steel Pier Double Quartet, who also sang at the opening session of the general meeting. The applause which they received was tremendous and the singers were gracious with their encores.

W. J. Carrington of Atlantic City was the genial toast-master, and Morris Fishbein in-

troduced the distinguished guests.

Col. George Lull of the Surgeon General's office was the first speaker and gave a general picture of the medical military situation as seen from his office. He told of the great need for physicians and of the slow response which had been made on the part of the younger physicians. Col. Lull is in charge of personnel and his job is a difficult one but his appreciation of the needs of the armed forces and also of the civilian populace, his common sense, his tact, and his spirit of fair play have made him one of the most popular and trusted medical officers in the country.

The next and last speaker was Mr. Paul McNutt. Since his speech was wisepread through the press in a very abbreviated form, a few quotations from his address are given:

"Every American will be called upon to do whatever is necessary to win the war."

"We are not getting enough physicians as volunteers. There must be an increase or else some other method will be required soon."

"Some areas in the U. S. have not discovered we are in the war."

"There will be no business as usual for physicians at home. Civilian needs must be met. Industrial areas need physicians."

"There is and there will be a growing problem of rehabilitation. We need every man hour of medical work."

"A total systematic plan must be worked out to meet these medical needs."

"Younger physicians must go now."

"The issue is 'Who shall do the rationing,' for America must have the doctors it needs."

Needless to say, those who were present realized the truth of what Mr. McNutt said and they left the hall with much to consider and ponder. They had received the same information from others but never from one in such high place in government, from one who had the power to see that "some other method" was used if the present method did not work.

The House of Delegates convened again at 9 o'clock on Tuesday morning—and the meeting started on time. During the morning Mr. McNutt spoke again and this time he assured those present that the Procurement and Assignment Service had been organized for the

duration of the war and that there were no plans for its perpetuation. But he warned those present that it must be made to work.

Two issues were presented which brought out considerable discussion. The first was a proposed amendment to the Constitution increasing the number of Trustees from nine to eleven. It seems that a large area of the U. S. in the southwest (almost one third of the U. S. geographically speaking) has no representative on the Board and men from this section felt there was no chance in securing representation without increasing the number of Trustees. After considerable argument, the proposal was voted down 36 to 112.

Another motion dealt with the official approval of the National Physicians Committee. There was general agreement that this Committee had performed an outstanding piece of work and that it should receive the support of all physicians. The point in question was whether it would be wise for the House of Delegates to take any official action. Those in favor said that to do so was to be courageous and not to be "pussyfooting" about the whole affair. Those who opposed the motion did so on the ground that the N. P. C. might be then construed as an agent of the A. M. A. and thus bring criticism upon the A. M. A. as a political or lobbyist organization. The vote on the question showed a large percentage of those present in favor of officially approving the Committee.

After lunch, which was provided for the Delegates, I had a short chat with E. D. Shanks Secretary of the Ga. association. Shanks has been Secretary for many years and he gave me some valuable advice.

A short meeting of the House of Delegates followed, winding up routine affairs.

At four o'clock, Buck Pressly, Tom Pitts and I went to a meeting of the Procurement and Assignment Committee personnel. All the big boys were there—Frank Lahey, Harvey Stone, James Paullin, Dean Diehl, Sam Seely. The general situation was presented and then suggested quotas were given to each state as to the number of physicians to be secured for military service for the remainder of this year. According to such unofficial figures as we

could obtain South Carolina leads all states in the percentage of physicians in uniform, and this is also true of the South as compared with other sections of the country. As a result the greatest effort in the coming months must be expended in states outside of the South. There was no mincing of words as to the work which had to be done. The relationship of Procurement and Assignment to Selective Service was gone into thoroughly.

It was brought out that a button or certificate for all those who had volunteered but had been declared essential was theoretically sound but that from a national standpoint, it presented insurmountable difficulties. It was agreed that individual states might issue such certificates if desired. Buck Pressly, Tom Pitts and I all thought that physicians in S. C. who had been held in their place by Procurement and Assignment after volunteering would be anxious to have such a statement. If those who read this think likewise, please say so.

Agreeing that all work and no play was to no avail, Buck Pressly, Lee Milford of Clemson, and I hied ourselves to the famed Hackney's. This is the largest seafood restaurant in the world and seats 3,000. As we left, people were waiting for accommodations.

That evening we attended the official opening session held in the auditorium, advertised as the largest auditorium in the world. On the platform were many distinguished guests, including representatives from various South American republics, and these were introduced in turn. Fred Rankin, incoming president, made the principal address. The A. M. A. medal was presented to Frank Lahey, retiring president. The Distinguished Service Medal was presented to Ludwig Hektoen, eminent pathologist and student of cancer.

Following the meeting, we walked back to the hotel. Atlantic City has a dimout each night. Street lights are painted black except for a small triangle on the side toward the shore. Stores have small blue lights in the windows and shades pulled down over the doors. No lights are allowed in any hotel room which might be seen from the ocean. No neon signs are to be seen. All in all, there is sufficient light to get around but a sense of the unusual

in finding Atlantic City without its famous lights.

Wednesday morning consisted in a hurried tour through the commercial and technical exhibits. In the latter I sat for an hour and saw and heard Pohl of Minneapolis demonstrate the Sister Kenney method of treating infantile paralysis. There is no doubt that this method of caring for victims of poliomyelitis is a great advance in medical care and that it will soon be accepted generally as the method of choice. I also sat in the Pediatric Section long enough to hear a splendid paper by Stokes of Philadelphia describing his work in the prevention of influenza in children. The vaccine which he is using gives much promise for protecting individuals from a specific strain of influenza virus—but the great trouble is that there are several strains and there is no telling which one will be the guilty agent in the next epidemic.

It was a great temptation to stay up at Atlantic City until the end of the meeting. There is so much to see and to do that one should stay, if possible, through its entirety. But, unfortunately, it could not be. So Wednesday afternoon I boarded the train and headed back for the old Palmetto State, arriving in Florence at the unwholesome hour of 3:45 a. m.

South Carolina physicians were in evidence at Atlantic City in goodly numbers. Those whom I saw were: Tom Pitts, Buck Pressly, William Weston, Lee Milford, Robt. Wilson, Sr. and Jr., Mac Davis and Benny Mayer (in their uniforms), Skeeter Zemp, W. E. Whitley, D. O. Winter, Jim Quattlebaum, Bobby Taft, Fred Kredel, Frank Johnson, and Frank Owens. Others who were registered but whose paths did not cross mine were: A. M. Duff, T. B. Reeves, R. L. Cashwell, J. B. Cutchin, J. B. Floyd, F. L. Geiger, G. E. McDaniel, S. E. Maislen, W. H. Poston, H. C. Rayson, G. S. Rhame, J. S. Rhame, Sedgwich Simons, R. H. Trueman.

All in all, it was a trip which was educational and enjoyable. Anyone who is able should go to at least one A. M. A. Convention every few years. If it does nothing else it will at least convince one that no matter how important he

may be in his home town, in the vast field of American Medicine he is still a mighty little frog in a mighty big pond.

JULIAN P. PRICE, Secretary
Florence.

NEWS ITEMS

Dr. V. P. Patterson of Chester has been elected President of the Chester Rotary Club.

Dr. Isadore Givner, formerly of Charleston, and a graduate of the Medical College of the State of South Carolina (1926) has been elected president of the New York Society for Clinical Ophthalmology.

The following physicians have recently been called into service: Dr. J. McMahon Davis of Columbia, Dr. T. D. Dotterer of Columbia, Dr. O. B. Chamberlain of Charleston, Dr. D. E. Michie of Marion, Dr. W. S. Scott of Spartanburg, Dr. Fred Crow of Spartanburg, Dr. F. R. Lawther of Moncks Corner, Dr. W. B. Jones of Beaufort, Dr. M. R. Mobley of Florence, Dr. Hugh Smith of Greenville.

Dr. J. R. S. Siau, formerly of Georgetown is reported to be in Australia.

At the meeting of the Medical Society of South Carolina on April 28th, Dr. J. A. Riebel, Air Surgeon of the 118th Observation Squadron, presented a paper on jungle warfare based on his personal experiences in the Far East.

At the June meeting of the Oconee Medical Society Dr. John R. Rainey of Anderson spoke on rheumatic fever.

Drs. H. M. Allison, Paul Hearn, B. C. McLawhorn, E. O. Horgar, Jr., W. P. Warner, Jr., and John Bell are to enter the Service. All except Dr. Bell have received their commissions.

Dr. Chas. Tripp of Easley is chairman of the State Highway Commission.

Dr. P. M. Temples of Spartanburg, a surgeon in the U. S. Navy, is ill with rheumatic fever in San Francisco. He had just returned from a convoy trip when he became ill.

HOUSE OF DELEGATES

Tuesday, May 19, 1942

Dr. George Truluck, President, opened the meeting, which was called to order at 3:20 P. M.

President called for report of Credentials Committee.

Dr. Claude Sease: Your Committee wishes to report that there are 40 delegates present.

President Truluck: I believe 25 delegates constitute a quorum. We are ready to open our business meeting of the Ninety-Fourth Session of the South Carolina State Medical Association. (Dr. Truluck opened the meeting with a few appropriate remarks. He then called on President-Elect Tom Pitts.) (Applause)

Dr. Tom Pitts: Mr. President, Members of the House of Delegates, you have perhaps noticed that I sat still for a moment because I wanted the applause to go to George, not to me. I know perhaps I will get two or three claps when I sit down, so I am trying not to get the whole thing.

Away from that phase to something that is far more serious. I certainly want to sanction everything that President Truluck has said. I want to carry it a bit further and say that those of us who remain at home will have perhaps a harder time than any group has ever had to maintain as much as possible of what we know now as the practice of medicine in its freelance form. There have been inroads started from all directions and there will be more inroads from all directions and it will be up to someone to maintain as much as possible of the good things that we have known in the past, and to prevent the encroachment of many of the bad that I imagine I see on the horizon. Now, there are one or two things definitely possible for us to do, all of which costs money, so I am going to start off by saying that whatever you have or whatever you get as a rule you pay for.

This organization is not properly represented in the legislative halls. It has had splendid work done by legislative committees of the present and past; no doubt the legislative committees of the future will do their utmost, but that is not sufficient to stem the tide and tumult and to meet it. I would like to suggest to this body consideration of ways and means of having a paid lobbyist in our South Carolina Legislative Halls. Whether or not you have come to think so, it is a fact that the lay public looks on us as servants and they even look upon the Medical Association as a semi-labor union. And as such we are going to have to do certain things that we wouldn't have done 20 years ago to meet this necessary change that is taking place.

What I am telling you, summed up, is that this Association must provide additional finances to

maintain a personnel in the State House and to maintain a representative in the Courts of the land to prosecute persons who are gradually encroaching on us under various guises.

There are numerous forms of semi medicine being practiced in our state now. There are, I believe although I couldn't prove it, criminal abortions going on that should be curbed. There are people practicing medicine who do not deserve to be practicing; there are cults who have encroached upon us and have gotten recognition by our laws that should be curbed.

All of this presents a challenge to us. If you want to fight these things it will cost you money. The \$6.00 you pay in a year is a paltry sum. The average labor union, as brought out in council this morning, charges members \$5.00 a month. So, if we were to pay \$5.00, \$30.00, or even \$50.00 a month and clear South Carolina of a lot of things that are now very unpleasant I think it would be money well spent for us and for the general public.

Now, I am going to stop with that because I think some people who have more insight and better powers of expression will discuss this matter with you as the meeting progresses. (Applause)

President Truluck: Before we have the report of the Secretary and Treasurer I would like to appoint on the Resolutions Committee, Dr. L. M. Stokes, chairman, Dr. Jim Desportes, and Dr. Carl West.

We will now have the report of the Secretary and Treasurer, Dr. Price.

REPORT OF THE SECRETARY

Members of the House of Delegates,

Your Secretary submits the following report of the activities of the Association and of his office for the past year.

Secretary's Office

Following the annual meeting in 1941, the Secretary's office was moved from Seneca to Florence where it is now located at 106-D West Cheves Street. The funds of the Association were transferred to the Guaranty Bank and Trust Company and as soon as the transfer was made all financial records of the Association were audited and a copy of the audit submitted to the Chairman of Council. The auditor also outlined a competent method of book-keeping, and this method is now in effect.

As soon as it could be accomplished a card index record of members of the Association was set up and this is now in operation.

Feeling the need for specific information regarding the members of the Association, a suitable question-

naire was prepared and sent to each member along with his membership card for 1942. The members of the Association have cooperated well and completed questionnaires from well over one-half the membership are now on file. It is hoped that those members of the Association who have not completed their questionnaires will do so immediately.

Membership

The membership held up well during 1941. There was a total membership of 926. 99 of these were honorary and 827 paying members. This was an all time high for paid memberships.

This outlook for 1942 presents a different picture. At a recent meeting of Council it was decided that should a member in good standing of the Association be called into military service, he would be carried as a member, without payment of dues, as long as he stayed in the service. This procedure is in line with most other state medical associations and will enable us to maintain our high total membership but will seriously reduce our number of paid memberships.

The Journal

Effort has been made to increase the quality and appearance of our Journal and at the same time to increase financial revenue through increase in the amount of advertising carried. During the past year the number of regular advertisers has risen from 23 to 34. It is true that some of our new subscribers buy relatively small advertising space, but every little bit helps and the gross income for advertising in 1942 promises to exceed that of 1941 by ten to twenty percent. It is planned to use this extra income toward improvement of the Journal.

Finances

A composite financial statement was printed in the last issue of the Journal and a detailed report has been submitted to Council. As of December 31, 1941, the finances of the Association were in a sound condition. Our revenue for 1941 exceeded our expense by \$611.91, and \$500.00 of this was transferred to the Reserve Fund which now stands at \$3,500.00.

At the present time, indications point toward sufficient revenue in 1942 to carry on the routine work of the Association. There should be more funds available, however, to assist Dr. W. L. Pressly and his advisory committee in the work of procurement and assignment of physicians, to assist the Legislative Committee in their fight against untimely and dangerous anti-medical legislation, to enable the Secretary to send out important information to members between issues of the Journal, and to provide an emergency fund which could be used to help a physician or his family in the event of sudden catastrophe. It is urged that you consider the raising of such funds and adopt appropriate measures toward this end.

County Meetings and Activities

The county medical societies have continued their activities and the monthly meetings, particularly those of some of the larger societies, have been of exceptional high calibre and have served as sources of both instruction and social enjoyment for large numbers of physicians.

The medical society secretaries have been most cooperative and I wish to express my sincere thanks for their work. The county secretary is the key man in our organization and no one knows this more than your Secretary.

Annual Meeting

Due to circumstances over which we had no control, it was necessary to cancel plans for holding our Annual Meeting at Myrtle Beach. The Association is deeply indebted to the Columbia Medical Society for its invitation to meet in Columbia and for the effort which it has made for our entertainment.

Legislative Affairs

Times of national emergency and stress are times in which, under the guise of patriotism or of apparent immediate necessity, much legislation is introduced into our legislative bodies which is inimical to the welfare of the physician and the public health. This past year has been no exception to this rule, and several such bills were introduced in our state general assembly during its last session.

Thanks to the work of the Legislative Committee, headed by Dr. J. McMahon Davis, no bill was enacted into law which was opposed by our Association. Too much praise cannot be given to this Committee for their tireless work.

Civilian Defense

Upon the recommendation of the officers of the Association, Dr. H. Grady Callison was appointed by the Governor to the office of Chief Medical Officer of the South Carolina Council for Defense. Under Dr. Callison's able leadership, the state has been organized for medical defense. The members of Council are serving under Dr. Callison as advisers in their respective districts.

Procurement and Assignment Service

With the consent and hearty endorsement of the officers of the Association, Dr. W. L. Pressly was appointed South Carolina State Chairman of Procurement and Assignment Service, and the Council has served as his advisory committee. The splendid service which Dr. Pressly has rendered is recognized in Washington as well as in this state and the Association owes him a debt of gratitude for what he has done and is doing.

Physicians in Service

South Carolina Physicians stand second to none in their willingness to serve their country in time of war. This was true during World War No. 1.

and is equally true today. It is impossible to obtain accurate records, but so far as can be determined South Carolina has sent as large a percentage, and probably a larger percentage, of her physicians into military service than has any other state — and this in spite of the high ratio of physician to population already in existence before hostilities commenced.

It is becoming more and more difficult to maintain an accurate and up-to-the-minute list of South Carolina physicians in uniform. There are, in the office of the Secretary, 180 names of South Carolina physicians in service. There are probably ten or more men whose names should be added to this list. All members called to service are asked to notify the Secretary immediately, and all county societies secretaries are requested to keep the Secretary informed as to the status of its members.

Secretary's Activities

Your Secretary tried to carry on his work as best he could. He visited as many district and county society medical meetings as possible. He made two trips to Washington and one to Atlanta for conferences relative to physicians in South Carolina. He attended the Annual Conference of Secretaries and Editors in Chicago last November, with expenses paid by the A. M. A. At the request of the Legislative Committee he represented the Association at open hearings before two committees in the General Assembly, and spoke before one committee on behalf of the South Carolina State Nurses Association. He attended meetings of various committees, and all of the meetings of Council and of the Procurement and Assignment Advisory Committee. And, finally, he attended to the routine work of the office with its large amount of correspondence and detail activity. Credit should be given where credit is due, however, and what efficiency may have developed in the daily work of the office is due to the loyal and efficient service rendered by the Association Stenographer, Mrs. Claude Watson.

The Future

No one can predict what lies ahead. Your Secretary is convinced of one thing however. Physicians must band together and work together as never before if they are to protect the medical interests of the public at large and of the profession itself. Proposals are being advanced in state and national legislative assemblies which if enacted into the law of the land will change the entire picture of medical care and welfare as we have known it. Changes are coming, and they will come either in cooperation with or in spite of the physicians themselves, and it is up to us to show that a progressive and enlightened profession is not only ready, but is resolved to assume the role of leadership in our planning for tomorrow.

Signed: Julian P. Price,

Secretary.

President Truluck: This is Dr. Price's first complete report. I have been closely associated with him in the past year. He has done excellent work not only as Secretary but as Editor of the Journal. This is our report, what shall we do with it.

Tom Pitts: Mr. President, I have been associated with Dr. Price right closely over the years and perhaps longer and closer than others here. He certainly has worked hard, he had gone all over the country and all over the State and he has kept our Secretary-Editor office open and alive. Following what council did this morning I would like to see this body go on record thanking Dr. Price for his efforts and for his splendid conduction of a State Medical Journal. I move sir, we receive his report as information and that we extend Dr. Price thanks from this organization.

Dr. Hugh Smith: I would like to second that motion.

The Chair: You have heard the motion and the second to it. Is there any discussion? If not, all in favor let it be known by saying "aye". (The motion was unanimously passed.)

We will now have the report of the Council, Hugh Smith.

REPORT OF THE CHAIRMAN OF COUNCIL.

1. The financial affairs of the Treasurer of the State Medical Association and of the Editor of the Journal have been audited and a detailed report submitted to Council, which has been approved and accepted. The finances of the Association are in sound condition and there are sufficient funds on hand to cover all the usual routine affairs for the coming year. To be brought out later, however, more funds are essential if we are to carry on certain other activities which council considers imperative.
2. Council feels that the Journal has been markedly improved in both its contents and format. We wish to express our appreciation to Dr. Price for his splendid work on our publication. We are glad to note that there is a definite increase in advertising revenue, which will be devoted to continued improvement of the State Journal.
3. Dr. Cain, Councilor for first district, brings to our attention a situation that most of us were not familiar with, namely, that last year the State Legislature enacted a bill, which is now law, which provides for the examination and licensing of applicants for the practice of Naturopathy in the State of South Carolina (Read parts of bill).
4. Dr. Sease, councilor for third district, brought to our attention an experimental health program fostered by the department of agriculture and submitted to the Newberry County Medical Society for their consideration. Council felt that the program as submitted to the Newberry Society contained several features contrary to the best interest of the

public health and to the Medical profession. Council advised the Newberry County Society to this effect.

5. The Councilor for the Fourth District has recommended to Council that the present Fourth District be divided into two Districts, as follows: (1) Greenville, Anderson, Pickens and Oconee; and (2) Spartanburg, Union and Cherokee. The present Fourth District contains practically 25% of the Medical personnel of the State and the above division would bring these two new districts into line with the other districts as they now exist. Council endorses the recommendation and submits it to the House of Delegates for approval.

6. Dr. McLeod, Councilor for Sixth District, brings to our attention the fact that illegal abortions are on the increase in his part of the State and believes that this is probably true throughout the entire state. Dr. Cain and Dr. Durham voiced similar opinions. This problem is simply brought to your attention.

7. Recommendations:

1. In regards to Naturopathic Practice Act, Council recommends to the House of Delegates that the Association, through its officers and the Legislative Committee, take whatever steps necessary to have this bill revoked.

2. That the Fourth District be divided into two districts as follows: (1) Greenville, Anderson, Pickens and Oconee; (2) Spartanburg, Union and Cherokee.

3. In view of the uncertainty of our present national and local situation and of the unexpected expenses, which have occurred and no doubt will continue, Council recommends:

1. That the dues of the State Medical Association be raised to \$10.00 per year; and
2. Since this increase in revenue can not be evident until 1943, that all members of the association be asked to make a voluntary contribution of \$4.00 for the Current Year. This money will be retained by the Treasurer and expended only on the advice of Council.

Hugh Smith
Chairman of Council.

Then Dr. Smith said: If you accept our proposals that we go to work on the State Legislature with a paid lobbyist, and council does feel this State should increase its expenses so that we can maintain in Columbia a first-class legal advisor, I think we should and would like very much to see you raise sufficient funds to retain a really able lawyer to work to our good and for our good each year that the legislature is in session. With these few suggestions I offer you the report of the Council.

The Chair: Council has made recommendations that I feel are very important to this association. Perhaps you would like to think about them a little before we vote on them and discuss them.

And I will pass over them at this time and take them up under the head of "New Business" later on.

We will have the report of the Executive Committee of the State Board of Health, Dr. Kenneth M. Lynch.

May 19, 1942.

To the S. C. State Board of Health,
The S. C. Medical Association.

Gentlemen:

As required by law and custom, the Executive Committee of the State Board of Health hereby makes its annual report to the State Board of Health.

You will find the complete details of the operation of the Department, including an account of the operation of each and every division, an accounting of the funds appropriated to it and expended by it, the minutes of the proceedings and actions of the Executive Committee, and a report of the State Health Officer, in a printed volume of some 300 pages, titled "Sixty-Second Annual Report of the State Board of Health of South Carolina." It would not be practical to present here more than a summary of the highlights of the year's experiences.

As predicted in the report of last year, the conditions of war have put upon the Department an increase in volume of the old problems as well as the burden of some which are new, and have at the same time handicapped the staff by entry into military service of members of the personnel, including some division directors.

In spite, however, of these unfavorable circumstances the Department has operated with a maximum of efficiency and harmony and a minimum of criticism. Of this fact, which could only be due to the harmonious cooperation of the Association and its members, the Executive Committee is appreciatively conscious.

As your delegated agents in the actual operation of the Department, whose terms of office expire with this meeting, the Executive Committee desires here to remind you of your legally constructed responsibilities and prerogatives as constituting, along with the Attorney General and the Comptroller General of the State, the South Carolina State Board of Health.

The law of the State says: "The said Association, at its first meeting after the first of January, 1893, and every seven years thereafter, shall elect seven members, to be recommended to the Governor who shall appoint them to cooperate with the State Officers above named, to constitute an Executive Committee, having power to act in the intervals of the meetings of the State Board of Health. This Committee shall make annually, a detailed report to the State Board of Health. Members of this Committee shall be removable by and at the pleasure of the Governor, upon the request of the State Board of Health, or for the neglect of duty, or other causes set forth by a majority of the members of the

Executive Committee. Vacancies shall be filled by appointment by the Governor on recommendation of the State Board of Health, or of the Executive Committee when such vacancies occur in the intervals of the meetings of the Association."

The Committee feels that you should be often reminded of the specifications of the law under which the State Board of Health and the Executive Committee operate, and especially at this time.

Thus is set up an organization democratic and effective in principle and practice, with the organized profession in supervisory charge of the public health, as it should be and an executive body appointed by the Association for actual and continuous operation of the Department.

The law does not require that the members of the Executive Committee be elected by districts, merely that seven members shall be elected. By custom, however, this has been the practice, with the exception that since the number of districts has been reduced to six, the seventh member has been considered to be "at large." This in application requires that there are two members from some one district.

In adherence to the law these seven members must be elected at the same meeting and their terms expire simultaneously. Vacancies created by death or resignation in the intervals of meetings of the Association are customarily filled by selection by the Executive Committee, in accordance with the terms of the Law. Such selections are legally subject to confirmation by the State Board of Health.

The Executive Committee has felt that the responsibilities, put upon it by the Association and by the law are very great and in behalf of whoever may compose it hereafter, we beg your healthy, and constructive criticism and support, in full knowledge of the Law, the facts and the circumstances. We respectfully submit that criticism of any other nature is harmful to the best interest of the profession in supervising the public health and to the best interest of the population as a whole. We further submit that the Law under which the State Board of Health is constructed and operated is based upon sound principles and the products of the ages of experience.

Division and Department Summary

1. The Division of Cancer Control, Dr. C. L. Guyton, Director (on leave of absence in the Army):

This youngest division has now cooperating with it Cancer Clinics in Anderson, Columbia (2), Greenville, Florence, Charleston, Spartanburg, Rock Hill and Orangeburg. In these clinics, during the first three quarters of the fiscal year of the State, to April first, 501 indigent Cancer patients have been handled at a total overhead cost for the Division of \$19,797.94, or about \$40.00 per case.

The work of the division will be continued, so far as finances will allow, under substitute direction for the duration.

2. Division of Maternal and Child Welfare, Dr. R. W. Ball, Director: (on leave of absence, in the Army):

With funds entirely of Federal origin, the activities accomplished by this department are as follows:

(a). Prenatal clinics, 1866, with total attendance of over 35,787.

(b). Well baby clinics, 958, with total attendance of 13,357.

(c). Toxoid distribution, to more than 25,000 children annually, as well as distribution of Schick testing material.

(d). Midwife supervision and control, with accomplished reduction from 6000 of untrained, unsupervised midwives to 1753, trained and supervised.

(e). Education in nutrition, through public health nurses and a program aimed at correction of dietary faults in low-income groups particularly.

(f). Post graduate courses arranged for practicing physicians and nurses.

(g). Promotion of dental hygiene, providing diagnostic and remedial measures to indigent school children.

(h). Mortality studies into the true causes of maternal and infant deaths. During the past six years the maternal death rate has decreased by 34%, the stillbirth rate has dropped 10.8%, and the infant death rate has declined 8.7%.

3. Bureau of Vital Statistics, Dr. Martin B. Woodward, Director:

During the pre-war and war periods this department has been pressed to the extreme in providing birth and death verifications and certificates, by reason of industrial and military demands.

4. Division of Preventable Diseases, Dr. G. E. McDaniel, Director:

The prevalence of contagious diseases during the year was generally satisfactorily low, for example, typhoid was at the lowest in history in this State. There was, however, more poliomyelitis (165) cases than expected, and a considerable incidence of influenza. A large and important effort in mosquito and malaria control, especially in the defence areas, in cooperation with the military services, and continued large investigations in this field are being conducted.

Typhus fever is definitely spreading. It will likely become one of our major problems.

5. Division for crippled children, Dr. H. Grady Callison, Director:

During the present emergency the heavy load in this department probably cannot be increased. It has been at a peak for the quantity of quality service which can be provided by the amount of money available for it. During the past year one thousand and thirty cases were added to the State Register.

6. Division of Dental Health, Dr. G. A. Bunch, Director:

In addition to an educational program for pre-

school and school children and the operation of pre natal clinics more than 50,000 elementary school children have had dental inspections and instruction in dental care, 16,987, of whom had dental corrections made and 28,876 of whom were referred to private practitioners for treatment.

7. Hygienic Laboratory, Dr. H. M. Smith, Director:

A total of 464,418 diagnostic tests were done during the last fiscal year, an increase of 41.2% largely by reason of war conditions. A total of 3,430 patients were furnished anti-rabic treatment, representing every county in the State, an increase of 28.5%. No treated patient died, one untreated case died.

8. Division of Industrial Hygiene, Dr. Harry Wilson, Director (on leave of absence, in the Army):

The work of this division carried on under substitute direction has steadily increased and may be expected to continue to do so, in view of the increased demands in industrial activity and required supervision.

9. Division of Rural Sanitation, Dr. Ben F. Wyman, Director:

This large department, interlocking with most of the others, has been under heavy handicaps by loss of personnel and increased demands, especially in the program of cooperation with the military services in the defense and maneuver areas. It has made arrangements for the concentration of personnel and service at any point in the State in case of emergency.

10. Division of Venereal Disease Control, Dr. Sedwick Simons, Director.

The war crisis has served as a major impetus to the great effort put upon this department by the pre-war national venereal disease control movement. About 40% of its burden come in the several definite war areas.

The problems in this voluminous work are age-old and are not yet under control. The staff has been diligent and capable and we believe that their efforts are having results as satisfactory as conditions allow. As an example of accomplishment, due to the campaign carried out in the maneuver area last fall, the venereal disease incidence amongst troops was reported by the corps area surgeon as less than 1 per 1000 per annum, as compared to an expectancy of 4.

11. South Carolina Sanatorium, Dr. Wm. H. Moncrief, Superintendent:

A very special department of quiet and effective service. It should be, as it is, a source of satisfaction and pride to its director, to the State Board of Health, and to the State.

All applications received are now being satisfactorily cared for. New quarters for medical personnel, 2 units, will be completed about July 1st.

In conclusion the Committee desires to express

its appreciation and its satisfaction to the entire personnel of the Department and of its time proven Secretary and State Health Officer, Dr. James Adams Hayne.

Respectfully submitted,

Kenneth M. Lynch, M. D.,
Chairman.

The Chair: You have heard the excellent report of our Executive Committee of our State Board of Health, by Dr. Lynch, what shall we do with it? Hearing no motion I rule we receive it as information and pass on to the report of the State Board of Medical Examiners, Dr. A. E. Boozer.

REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS OF S. C.

For the Year 1941

Applicants for Examination, Doctors, June Examination 42; November Examination 3. Total 45.

The Board met at Columbia, S. C. in June and November 1941 to tabulate grades made by applicants at the June and November examinations with the following result: Passed 45, Failed 0. The following schools were represented: Emory 1, Univ. Colorado 1, Jefferson 1, Univ. Louisville 1, Tulane 2, S. C. Med Col. 39.

20 licenses were granted by reciprocity as follows: Georgia 3, Kentucky 1, Louisiana 1, Maryland 2, North Carolina 2, Ohio 1, Pennsylvania 1, Tennessee, 7, Virginia 2.

A. Earle Boozer, M. D.

Secretary.

The Chair: You have heard the report and hearing no motion we will receive it as information and pass on to the report of the Cancer Commission, Dr. Lynch.

SOUTH CAROLINA CANCER COMMISSION

(Advisory to Division of Cancer Control, State Board of Health)

May 19, 1942

During the past year Cancer Clinics have been in operation in the following hospitals:

Anderson County Hospital	Anderson
S. C. Baptist Hospital	Columbia
Columbia Hospital	Columbia
Greenville General Hospital	Greenville
McLeod Infirmary	Florence
Roper Hospital	Charleston
Spartanburg General Hospital	Spartanburg
St. Philips Mercy Hospital	Rock Hill
Tri-County Hospital	Orangeburg

The program which was stopped on December 15, 1940, was begun again on March 15, 1941. Though funds became low applications were accepted as received and the Clinics continued in operation throughout 1941, and up to the present time in 1942.

On July 1, 1941, a State Appropriation of \$8,000.00 was made available and a tentative budget of Federal funds totaling \$16,000.00 was made. It was

necessary to use \$1042.27 of the 1941-42 budget to pay for services rendered patients in June 1941. Whereas the Federal Budget was tentatively set at \$16,000.00 only \$14,600.00 has been available consequently, we may be forced to close the clinics before July 1, 1942.

For the first three quarters of the Fiscal Year ending April 1, 1942, \$19,797.94 has been expended and 501 patients have been admitted to the clinics.

Dr. C. L. Guyton on his return from the Harvard School of Public Health resumed his duties as Director on July 1, 1941, and has continued to the present, when he is ordered into military service.

The Legislature has again appropriated \$8,000.00 for hospitalization and this will become available July 1, 1942. How much money will be available from Federal sources has not yet been determined because no Federal appropriation for the fiscal year 1942-43 has yet been made.

In any event the Program can be continued from July 1, 1942, until the \$8,000.00 State Appropriation has been expended.

The State Legislature appropriated in 1941 a sum of \$2,000.00 to the Commander, Women's Field Army, American Society for the Control of Cancer, for the purpose of conducting an Educational Program. This appropriation has been continued for the fiscal year 1942-43. For this reason the Division of Cancer Control of the State Board of Health has limited its Educational Program to articles in newspapers, radio talks, and distribution of literature regarding cancer, because our funds were so limited it was felt they could better be expended for hospital care and treatment than for educational efforts.

Kenneth M. Lynch, M. D.,
Chairman.

The Chair: You have heard the report of the Cancer Commission, by Dr. Lynch, if there is no discussion we will receive it as information and pass on to the Committee Reports.

(Dr. N. B. Heyward, chairman of the Scientific Committee, was recognized by the Chair and made announcements with regard to changes in the scientific program.)

The Chair: We will hear from Dr. J. McMahon Davis, of the Committee on Public Policy and Legislation. As Dr. Davis is not present we will pass on to The Committee on Maternal Welfare, Dr. R. E. Seibels, Chairman.

(Dr. Seibels read his report.)

The Chair: You have heard this report and I am sure you are all interested. It is received as information.

Dr. Tom Pitts: Mr. President, permit me to introduce to you our fraternal delegate from Georgia, Dr. Lombard Kelly.

Dr. Kelly: Mr. President and Members of the South Carolina Medical Association. I have had the honor to be requested to come before you as

a fellow delegate of the Medical Association of Georgia.

At the Medical Association of Georgia this year, which took place in Augusta, April 28th to May 1st, I was present at the House of Delegates' meeting when several fraternal delegates came before the association and I was struck by the remarks made by one physician from Alabama, one of the fraternal delegates from Alabama, who was an Eye, Ear, Nose and Throat Specialist from Birmingham. He was transplanted from the middle west and a newly made southerner, and like persons transplanted always make remarks about their origin and so on. I feel very close to South Carolina myself. I was born and reared in Augusta. My maternal grandmother was born and reared in Edgefield, South Carolina and my wife was born and reared in Laurens County, and being just across the river from your state I have frequently fished and hunted in South Carolina and I feel almost as much a South Carolinian as a Georgian. We probably are very much the same and our educational institutions have very much in common and I think that we can understand each other probably better than individuals from other sections of the country can.

Along the line of Medical Education I am reminded of the fact you have in South Carolina one of the oldest medical colleges in the United States. I see Dr. Wilson, and I would like for him to remind me if it was founded in 1823 or 1825?

Dr. Wilson: Neither doctor, it was in 1824.

Dr. Kelly (Continuing): I stand corrected. I am glad to see Dr. Lynch sitting over there. I am well acquainted with the fine school you have in Charleston and I insist on calling it by its proper name the Medical School of South Carolina. Most of our people call our school the Augusta Medical College. It doesn't please me. It was christened first Medical College of Georgia, and then called the Medical Department of the University of Georgia, and in 1931 was given its present title, which we feel should be used, the University of Georgia School of Medicine, and that is the name of our school now.

I know on occasions of this kind you don't care to be harangued or to listen to a long address and while in our Georgia meeting the matter was broached, what are the functions of a fraternal delegate, it was never decided what the functions were. As I was able to conclude at the end of the session the main purpose is to offer felicitations and to let you know the members of the Medical Association of Georgia are interested in what you are doing, that we have a fellow feeling with you and want to make you know they are interested.

In this connection I want to say how wonderfully we have been impressed in Richland County concerning the fine society you have in Richland County. Yours is one of the most wide awake local societies in the United States (Applause) and on one oc-

casion we borrowed one of your speakers, we happened to find out he was coming over here and got him to stop off in Augusta. It is inspiring to know the kind of work you are doing in Columbia and in the State and I have been very much impressed by the membership of the Medical association in South Carolina as a whole. I was thinking as I sat back there the members of the profession I have seen back there this afternoon look better than those in Georgia. You don't seem to have as many who are not as careful about their personal appearance. Some of us doctors get careless in that regard, especially those who graduated a long time ago.

All physicians in the end get their reward and I presume it is somewhat in proportion to the kind of work they do and those of you who read Tonics and Sedatives in the J. A. M. A. have probably seen the story I am going to tell, and I hope the reward of both physicians won't be the same as the German aviators who knocked at the gate of St. Peter, there were 50 of them, and St. Peter said, "Who are you anyhow?" And they said, "We are 50 German aviators the R. A. F. killed today." And St. Peter said, "Let me see the DNB News agency report," and he looked and said, "The DNB says only 2 German aviators were killed today. Two of you can come in, the other 48 can go to hell." (Applause.)

The Chair: I am sure we have all enjoyed the remarks of Dr. Kelly. We should have introduced him to you, he is Dean of the University of Georgia School of Medicine, Augusta, Georgia. Dr. Kelly, I hope you will participate in any discussion we have on the floor.

The Chair: We will continue with our reports. The next is the Control of Cancer, by Dr. F. E. Kredel.

ANNUAL REPORT CANCER CONTROL COMMITTEE

During the past year considerable education work on the menace of cancer has been carried out. Mrs. John Drake, working under a special State appropriation and responsible to this committee, has carried the message to the public that Early Cancer is Curable.

The question has often been asked why two different cancer committees are needed. The Cancer Control Committee is a special one appointed annually by the president to advance public education on cancer through the Women's Field Army. The Cancer Commission is a permanent official body of the State Administration set up by law, its members appointed by the governor on nomination by the president of this association. The Commission is charged with both treatment and education.

We believe that one body can handle the problem of cancer more efficiently than two. We therefore recommend that our group be not reappointed and that the Cancer Commission be designated also as

the Cancer Control Committee of the South Carolina Medical Association.

Frederick E. Kredel,

Chairman.

May 19, 1942.

Dr. Kredel: Gentlemen, you are about to witness a remarkable phenomenon in these days of bureaus. The tendency is for more boards to be created and none die out. Here and now the Cancer Control Committee commits corporate suicide. (Applause)

The Chair: You have heard the report of Dr. Kredel and I will refer that recommendation to the Resolutions Committee.

Now the Report of the Committee on Historical Medicine, by Dr. J. I. Waring.

REPORT OF THE COMMITTEE ON HISTORICAL MEDICINE

Your committee has continued to function in such a fashion as the times permit. During the past four years of its existence it has made efforts to secure historical material and has by now acquired the nucleus of a collection which is by no means adequate but still contains the germs of a future history of medicine in South Carolina. This collection is housed in the Library of the Medical College and is available to all members of the Association. Additions are highly desirable.

Without funds the Committee can do little active work. Occasional inquiries are answered and material is collected whenever it is given as a gift. During the past year there has been presented to the committee, thru the kind offices of Dr. L. M. Stokes, a portrait of Dr. Joseph Glover of Walterboro. The committee has also published in the Journal a sketch of medicine in the state from 1670 to 1700. It is hoped that similar installments may be produced from time to time.

Your committee realizes that relatively few of the members of the Association are concerned with the history of medicine, but feels none the less that the work assigned to it is important and valuable. We earnestly ask the interest and assistance of our whole membership, and welcome at all times suggestion or criticism of any sort.

Respectfully submitted,

O. B. Chamberlain

P. G. Jenkins

Robt. Wilson, Jr.

J. I. Waring, Chairman.

The Chair: You have heard the report of Dr. Waring. If there is no discussion we will receive it as information.

We will now have the report of Dr. Wm. Weston, Jr., on Public Relations.

ANNUAL REPORT OF PUBLIC RELATIONS COMMITTEE

There have been several articles sent to the newspapers of South Carolina for publication. We now

have on hand two articles to print for publication.

On January 12, 1942, a combined meeting of the Committees of the Medical College of the State of South Carolina and the Public Relations was held and the so-called Stokes resolution was unanimously passed. The resolution:

"Dr. Stokes moves that the Chairman of the Public Relations Committee request the physicians of the Medical College to produce a work on Medical Care which is to be taught in the high schools of South Carolina and to be dedicated to the people of South Carolina. The physicians of the Medical College and physicians of the Public Relations Committee are to exercise their judgment in selecting physicians from different parts of the State to work in collaboration on this book."

Dr. Wilson's comment:

"We have discussed the Stokes Resolution requesting the medical college to produce a work on medical care for the use of the high schools of South Carolina, which you referred to me in March.

"We feel that in the existing emergency the time for undertaking to produce such a work is not propitious. Crowded as we are with so many activities in connection with the national defense, and other phases of the national emergency, and with our staff depleted, it seems impracticable to undertake a work of such magnitude. We feel therefore it will be wise to let this matter rest until the national emergency has passed.

Signed, Robert Wilson, M. D."

This Stokes Resolution is an excellent idea which I think should be pushed. If any member of the South Carolina Medical Association would volunteer to assist in this work it will be deeply appreciated, as your Chairman feels that this would be doing real constructive work which would assist the people of South Carolina.

The expense of printing has been borne by the State Board of Health and the mailing and secretarial expenses by your Chairman.

In conclusion, I urge the continuation of the Committee on Public Relations.

William Weston, Jr., Chairman.

The Chair: You have heard the report of Dr. Weston. If there is no discussion, we will receive it as information.

We will hear the report of the Committee on the Medical College, Dr. L. M. Stokes.

Dr. L. M. Stokes: Mr. President, members of the House of Delegates, in 1891 our Medical College changed its period for study from 2 years, about four months each, to 3 years. Following that, I think it was about 1901 or 1902, the course was changed to a four year course and during that interval of time the terms were increased from four months to nine months. Prior to 1901 it required two sessions of four months each at about \$75.00 tuition per year to become a physician. At that

time we had physicians; but a physician had no preliminary education — it wasn't required of him. Anyone who could write his name and pay his tuition could practically become a physician. We had physicians galore, of course, every crossroad had its physician that engaged in agriculture and engaged in commerce or any kind of industry and practiced medicine as a side line, carrying their own medicines with them.

As medicine has increased not only in expensiveness, but in time, physicians can not afford now, with the education they have to go out and practice at crossroad locations. Our people have become very dissatisfied with medical care. Naturally they want, they need physicians and when they are ill they cry out for physicians but our medical schools can not send physicians wherever they are needed. The problem today is one more of distribution than it is of production of physicians. We produce practically enough physicians but we can not distribute those physicians as they should be. There is an overcrowded situation in the cities and a lack of medical care in the rural districts and so you find an increasing dissatisfaction. And, just as in every line, the people who elect the members to our Legislature feel the members of the legislature can produce almost unthinkable changes by passing a law. As a result of that dissatisfaction in the last session of the Legislature the House passed a law requiring or requesting the medical college to take 75 students instead of 50, and no appropriation was made with which to carry on.

Gentlemen, that will give you an idea of the predicament we are in. We want the members of the House of Delegates to know so that you can set the delegations of your county straight when you hear these problems discussed and these matters come up. We cannot create physicians arbitrarily.

Another impression which we sensed in the Legislature is that the doctors wish to limit the number of physicians; they wish to have few physicians so that their incomes would become better; in other words, we want a monopoly. There is nothing further from the truth than that is.

Furthermore, they feel that standardization is another method to curtail the number of physicians and that we are dictated to by the A. M. A. and the American College of Physicians and the Association of Medical Colleges. A moment of reflection will show this to be a fallacy.

Another problem that has arisen is the drafting of the physicians from the Medical School into the service. Every Medical School has been asked to take a larger number of students. Our school went to work and made an investigation and reported that certain departments could take 50 students. The college agreed to take 50. But, in taking 50 students in the school it has been necessary to maintain a certain definite ratio between the num-

ber of teachers and of students. Now, the Selective Service exempts men who register as medical students to study medicine, providing they apply through the dean to the navy or to the army as they prefer, for a commission. Should a man fail in his studies, however, he is subject to the draft. If he goes on and completes his work, and it is a "B" school he can not receive his commission because the Army and the Navy will not take him from a "B" school; nor will the State Board of South Carolina grant a license to practice to a graduate of a "B" school. For this reason we should maintain the standard of the Medical College and it is highly important for the physicians of South Carolina to let the citizens and legislators know where we stand on this most important phase of medical care. The Medical College is the bulwark of the medical care in this state. It is our only medical school and your Medical College Committee sincerely hopes that every member of this House of Delegates see that false impressions are and will be corrected and that we carry on this school in the tradition of the men who founded it and have had it in all the years of the past.

The Chair: You have heard the report of the Medical College Committee, which we will receive as information. The Committee on Medical Economics, Dr. C. B. Epps.

SUMMARY

1. Your committee realizes that the problem of securing adequate medical attention for the rural districts is one of the hardest to solve. We believe that there are several ways in which present conditions can be improved. One way is by group insurance, either by the community joining in a local agreement, each family paying in a certain sum; or by taking out commercial insurance to pay for medical attention. The doctor should be, we believe, guaranteed a minimum income and be allowed to make what he can above this. Only as a last resort should the government be depended upon for aid.

2. As a possible solution of the problem of securing medical attention for low-wage groups, and for better paid groups, we commend the form of group medical insurance that we have already described as having been found satisfactory in the large furniture plant mentioned.

3. For the general public, we believe that the forms of health insurance now popular in South Carolina, so far as they go, are fairly good. But we recommend that they be extended to pay doctor's bills, and drug bills, in addition to the hospital bills now being paid.

4. We believe that an increase in the number of graduates would aid to a considerable extent in securing more doctors for the rural districts. It seems reasonable to assume that, as the cities become more and more supersaturated with physicians, the economical considerations will force more of them into rural districts.

In our opinion a committee should be appointed by the president of The South Carolina Medical Association to look into the matter of reducing costs of medical education, and to consider the matter of reducing the amount of study necessary for graduation as a general practitioner as compared to that necessary for one who expects to devote his time to a specialty. We realize that this calls for the closest study.

5. We wish to appeal to the doctors who are combined into medical groups to make every effort to make the costs to the patient more reasonable. We believe that this will be to their own financial interests, as other physicians will feel more free to refer patients to them.

6. We do not consider as wise the suggestion to license so-called "Doctors' Aids." This would cause the general public to lose sight of the difference between the aids and the doctors, and would cause a lowering of our standards of practice. The patient deserves the best medical talent that can be supplied.

7. Wherever practicable, we believe that for nurses the eight-hour plan should be established. As most people are on an eight-hour basis, it seems unjust to force nurses to work 12 hours. However, at least under present economical conditions, it appears wise to reduce pay to \$4.00 per day.

8. Wherever the doctor is paid, either under insurance secured from groups, or by the government, for attending the indigent, we believe that he should be paid for work actually done. The plan of giving each doctor so many families and paying him a fixed amount, no matter how much work is done, is not wise. This has been demonstrated under such payments made by the F. S. A.

9. From our present knowledge, we look with suspicion upon compulsory federal hospitalization. Our organization should look well into it, and we should then take a definite stand upon the subject.

10. The federal government's efforts to rehabilitate the unfit registrants should meet with our sympathetic cooperation.

11. We wish to bring to your attention something that vitally affects our people; and that is the habit of keeping concentrated lye in the homes. Our hospitals have a large number of children crippled for life by oesophageal strictures caused by this substance. It is not only a terrible thing for the little patients, but it is a quite considerable expense to the tax-payers to support many of these patients in our charity wards. We believe that lye should either be completely outlawed, or severe restrictions placed about its sale and use.

12. Our last word concerns the general medical care of the poor. We believe that it should be our constant effort to convince our government that the best way to treat the poor is by us. Show the government that, being already established, with overhead expenses being paid anyway, that we can afford to attend the poor better, and at less cost to

fense is carrying on many activities for the protection of the tax-payer, than can anyone else.

Respectfully submitted,

Carl B. Epps, Chairman.

Dr. Stokes: Mr. President, I think the members are scattered around pretty generally and I move we recess until 8:00 o'clock P. M. (Motion carried.)

The Chair: The meeting of the House of Delegates is recessed until 8:00 o'clock P. M., Tuesday, May 19, 1942.

HOUSE OF DELEGATES

Evening Session

Tuesday—May 19th, 1942

8:00 O'clock P. M.

The Chair: The meeting will come to order. We will now hear the report of Dr. J. C. Sease, Chairman of Committee on Public Health and Instruction.

REPORT OF COMMITTEE ON PUBLIC HEALTH AND INSTRUCTION

It has become a maxim that the South Carolina Medical Association is the State Board of Health. The law, however, states that "The South Carolina Medical Association, and their successors, in their corporate capacity, together with the Attorney General and Comptroller General of the State, and their successors in office, are a Board of Health for the State of South Carolina, to be known as the State Board of Health." This act was passed in 1878. It may be of interest to state that following the passage of the above act, the General Assembly granted to the State Board of Health very wide and sweeping powers and privileges and made a definite assertion that the Board "shall be the sole adviser of the State in all questions involving the protection of the public health within its limits."

The General Assembly, probably realizing that the State Board of Health could not properly function except during some annual meeting of the Medical Association where the Attorney General and the Comptroller General had been invited to participate, and where the Medical Association resolved itself into a Board of Health, created the Executive Committee of the State Board of Health. The Executive Committee was given the powers and privileges to act in the intervals of the meetings of the State Board of Health.

The Executive Committee, as constituted by law, consists of the Attorney General, the Comptroller General, seven members of the South Carolina Medical Association, elected by that Association, a dentist, elected by the State Dental Association, and a pharmacist, elected by the State Pharmaceutical Association. These gentlemen are entrusted with the duty of carrying on the public health program in the State of South Carolina when the State Board of Health is not in session.

Perhaps it would be of interest to know that the State Board of Health is organized under the following provisions of Article 8, Section 10 of the Constitution of South Carolina 1895:

"It shall be the duty of the General Assembly to create Boards of Health wherever they may be necessary, giving to them power and authority to make such regulations as shall protect the health of the community and abate nuisance."

In this report we have made some statements and given some quotations in reference to the organization of the State Board of Health and the Executive Committee of the State Board of Health, but perhaps it would be advisable to quote the full section of the law in reference to the appointment and duties of this Committee.

"The said Association, at its first meeting after the first of January, 1893, and every seven years thereafter, shall elect seven members, to be recommended to the Governor, who shall appoint them to cooperate with the State officers above named, to constitute an Executive Committee, having power to act in the intervals of the meetings of the State Board of Health. This Committee shall make, annually, a detailed report to the State Board of Health. Members of this Committee shall be removable by and at the pleasure of the Governor, upon the request of the State Board of Health, or for neglect of duty, or other causes set forth by the majority of the members of the Executive Committee. Vacancies shall be filled by appointment by the Governor, on recommendation of the State Board of Health, or of the Executive Committee when such vacancies occur in the intervals of the meetings of the Association."

The act giving the power of the Dental Association and the Pharmaceutical Association to have members on the Executive Committee is much later in the history of the State Board of Health, but is definitely in line with the law just stated.

This committee realizes that there will be a separate report as to the part that the members of this Association are playing or will play in the armed forces of the Government. The prosecution of the war must be carried on and it is well for us to realize that, unfortunately, there will result in the clash of arms much misery and distress. It is essential that not only must actual war casualties be cared for by medical and other professional personnel, but the daily life of the soldier must be safeguarded in reference to the prevention of diseases. This committee feels that the members of the medical profession have already fully demonstrated their desire and determination to carry on and play their part.

Civilian Defense—Without carefully thought out plans for the defense of our civilians, much confusion, suffering and probable loss of life would result. The South Carolina Council for National De-

tion of our citizens. Of special interest to us of the medical profession is the part that the emergency medical service will play. Here, acting under the direction of the Chief Medical Officer with associated medical officers of every county of the State, preparations have been made and are being made for the caring of all problems that may result by reason of enemy action, whether this be sabotage or direct attack.

The title of this committee is Public Health and Education. The committee realizes that probably the word "education" means the education of the general public in regard to their health, but we desire to stress the importance of the part that the Medical College of the State of South Carolina must have in this program. The Medical College trains and prepares most of the physicians in South Carolina for their life's work, thus, there should be instilled in the minds of our young medical graduates that one of the great contributions that they can make to their State is the education of the people within the field and scope of health. The public must depend upon the family physician to give detailed information and instructions about diseases and other conditions. It may be true that the South Carolina State Board of Health is carrying on a program of education and instruction through the daily newspapers, the radio, distribution of literature and in other ways, and it must be remembered that the association and various component county societies are likewise carrying on a program of education through newspaper articles, radio addresses and other means, but there still remains the part that we, the medical profession of the State, play in this important aspect of health. Instruction is essential.

This committee feels that the report does not confine itself to the subject matter as stated in the name of the committee, nor is it intended to be such. It must be remembered, however, that public health does not mean the State Board of Health or various county or city boards of health. It means the health of the public—the welfare of the public—and within that meaning this report is apropos to this title. The committee is not offering any concrete suggestions or recommendations, neither do we feel that this report is complete in any detail. Your attention should be directed to the reports that are made on the following allied subjects: Cancer, Venereal Disease Control, Maternal and Child Health, the South Carolina Tuberculosis Sanatorium, the State Board of Health report, the report of the Medical College of the State of South Carolina and other allied reports.

This report is respectfully submitted by the Chairman on behalf of the committee which is as follows:

A. P. McLeroy, M.D.

C. H. Blake, M.D.

W. R. Mead, M.D.

Claude Sease, M.D., Chairman

The Chair: You have heard the report of this Committee, is there any discussion? If not, it will be received as information. Next we will have the committee report on the Study and Control of Syphilis, Dr. J. E. Boone.

House of Delegates,
S. C. Medical Association.
Gentlemen:

We herewith submit, for your consideration, a report of developments within the province of Syphilis Control in South Carolina as noted during the twelve months period just ended.

The Division of Venereal Disease Control has continued to function under the direction of the State Board of Health with Dr. Sedgwick Simons, Director. The amount of work placed on this department has increased considerably in the past year. This is to be expected on account of the war effort which has increased the population of this state considerably, and as a result of concentration of armed forces, we naturally expect an increase in venereal diseases. However, there has been very little which I feel has been due to the efficiency with which this department has operated.

I wish to call your attention to a few outstanding accomplishments of the Venereal Disease Control program. This year the federal allotment totaled \$239,600 as compared with \$136,400 the previous year, and the state of South Carolina, with only six counties in the state given an appropriation of \$50,770, this makes a total of \$290,370 which was made available in South Carolina. The central office has continued to operate with the same personnel, however, it will be necessary to increase the clerical service in order to carry on this work successfully.

There is a supplemental project being financed by the WPA which is under the direction of the State Board of Health and will soon become engaged in the operation of the Central Registry venture. This will be of great assistance in the furtherance of the program.

The Division of Venereal Disease Control has cooperated with the Selective Service Authorities and the Chief Medical Officer and his Staff, and have cooperated to the fullest extent in examinations of selectees.

We wish to call your attention to the operation of the Federal Personnel which are attached to the Staff of Spartanburg, Charleston and Richland Counties Health Department Commissioned Officers of the U. S. Public Health Service with orders of full-time venereal disease control operation. This has been a progressive step in our program and is working very satisfactorily.

The free drugs issued to Doctors last year totaled \$144,568. This was a considerable increase over the previous year.

It is a source of gratification to this committee that the Doctors of the State have shown such splendid cooperation and support. We wish to assure

you that the implied confidence is appreciated. Also, the Personnel of this department wishes to express to you their thanks and appreciation and assure you of their continued interest and best effort for a successful program during the coming year.

J. E. BOONE, M.D., Chairman.

The Chair: You have heard the report of Dr. Boone, is there any discussion? If not, it will be received as information.

Dr. McGuire: (Recognized by the Chair) May I ask a question, please? I see in the State that South Carolina is next to the worst state in the union on venereal diseases. I would like to ask if that is a correct statement?

Dr. Boone: I really don't know, I will have to ask Dr. Hayne to answer that question.

Dr. Hayne: I would have to say that one reason for that is that one out of every three Negroes in South Carolina has syphilis according to our best information and about one out of every twenty-five whites have syphilis. And that we are worse off than most of the rest I think is due to the amount of Negroes we have. Mississippi compares very favorably with us, (laughter) I think it is the bottom and we are next. That is about the status of the affair. There are about 180,000 cases of syphilis in South Carolina at the present time and we are treating about 25,000. When we are going to get through with the 180,000 I don't know except that a vast majority of this 180,000 doesn't require treatment. In a man who has had syphilis ten or fifteen years, the spirochetes and blood cells have a sort of armed truce, they get along very well until somebody comes along and gives them a shot and that starts the war that is like the first gun at Fort Sumter. If we confine our interest to the people who haven't had it over five years we may appreciably depreciate the syphilis. At that stage they are contagious. After that they are not.

The Chair: Does that answer your question, Dr. McGuire?

Dr. McGuire: Yes sir.

The Chair: Very well, we will pass on. Now, we will hear from Dr. J. D. Guess. I asked him to make a report on Post-Graduate Study in this State. In Anderson they have one of the outstanding seminars in the State, Dr. Hines used to tell us. He used to report to the Council, but it has never been reported at the State Medical Association, only in a way. Dr. Guess is to tell us how Anderson runs their Post-Graduate Seminar, Dr. Guess.

REPORT OF COMMITTEE ON POST-GRADUATE INSTRUCTION

This committee was not appointed until late in April, although the chairman had been asked to give consideration to a report with recommendations as to what should be undertaken with regard to graduate instruction of doctors in South Carolina.

Three important considerations stand out in our

thinking. The first is that twenty-five per cent of South Carolina's doctors will soon have entered into the armed services of their country. Not only does this eliminate them from the operation of any immediate scheme of post-graduate instruction, but it so increases the load of those who are left, that they will have little time or energy for efforts outside the immediate duties of practice. True it is that it is planned to impress into service men who have already retired from practice, and it is also likely true that many specialists and partial specialists will have to get out the old kit of the general practitioner and resume work which will no longer come easy to them. Both of these groups would greatly benefit from refresher courses designed to aid the family doctor. It is also true that press of business will prevent many from attendance upon more distant clinics and medical meetings, and their only source of medical instruction will have to be close at hand.

The second consideration is the fact that instructors will probably be hard to obtain. For post-graduate instructors to attract attendance the subjects treated must have general appeal, they must be presented by men whose opinions and knowledge demand respect and they must be offered in attractive form.

Hospitals and schools are being depleted of their younger staff members by the war, thus increasing the load of the older men. Schools are operating on a twelve months basis. Travel is difficult, slow and unpleasant and is likely soon to be rationed. These things will tend to keep acceptable teachers at home.

The final important consideration discussed by your committee is the fact that for several years South Carolina has offered in some respects remarkable opportunities for post-graduate instruction. I refer to the excellent monthly programs of the Columbia Medical Society and those of the Greenville Society. These societies have been fortunate in being able to secure outstanding teachers who month by month have presented excellent instruction in various phases of medicine. I point you also to the Piedmont Post Graduate Clinical Assembly which has each autumn offered an excellent opportunity for receiving instruction from eminent teachers. In the past the annual registration of the Assembly has averaged about 200 doctors, and others who have not registered have been present for some of the lectures in which they were most interested. In the main the clinic has been supported by a registration fee of \$2.00, although the Anderson Society and the County Hospital have each made some financial contribution each year. The Assembly has experienced no difficulty in securing speakers.

The Saluda (N. C.) Seminar should not be overlooked. Although located just across the North Carolina line from Spartanburg, it is attended largely by South Carolina doctors, who have benefitted greatly from its teachings of pediatrics and related subjects.

However, although these agencies have and will probably continue to exist, the committee realizes that they do not adequately fill the need of the profession for post-graduate study. This need would be more nearly met, if there should be established an assembly similar to that held in Anderson, to be held in or in the neighborhood of Florence and in or near Orangeburg, and it urges that the counselor and the society officers in these communities give the matter of the establishment of such assemblies serious thought.

A final word as to the personnel of assemblies such as those proposed and of special society programs. Most of the medical specialties are represented in the State by able and well prepared physicians, whose potentialities as teachers are great. Many of our doctors are in demand as speakers in more distant areas. Now is certainly an excellent time to develop these local men as instructors to the State's profession. These men would, if called upon, give the time necessary to aid in any such educational program as we already have or any extension of it, such as has been proposed. The committee urges that we give the men an opportunity to help themselves by giving instruction to others.

(Signed)

J. Dechard Guess, M.D., Chairman

J. G. Murray, M.D.

R. M. Pollitzer, M.D.

J. R. Young, M.D.

The Chair: Gentlemen, I feel this is a very important subject for the South Carolina Medical Association to consider. I would like to have any of you discuss this if you feel so disposed.

Dr. Hayne (Recognized by the Chair): Recognizing the necessity for such course of study, the State Board of Health managed to maintain a fund by which we sent about fifteen doctors to the Saluda Seminar and sent Negro doctors to Mahari, and tried to establish some sort of post-graduate work in the Medical College at Charleston, where we would give scholarships. That has helped a great deal. We send any doctor, who wishes to pay his board and fees there. We sent probably fifty last year and will probably send the same number this year to Saluda, and we sent Negro doctors for post-graduate instruction at Mahari, and I think that has helped some but I think the Chairman's idea that they should have something similar to something they have in Anderson and have it in Florence and Orangeburg, is an excellent suggestion.

Dr. Young (Recognized by the Chair): Coming from Anderson and knowing about the seminar, I would like to make this observation—good teachers are not hard to get. We haven't experienced any difficulty in getting good men, outstanding men, to come to our assembly. Oftentimes no expense is attached to it at all, sometimes we do pay the expense of the teacher. This fall Dr. Oxner from New

Orleans is coming and Dr. Saunders from Memphis for a surgical day. I had only to ask it. I think in Florence and Orangeburg all that would be necessary to get such a movement started would be for the doctors in either of those communities to decide to start it and it would start. It is up to the doctors in those two communities. Talking to the point, if they did decide to have such a meeting they could have it. I think the suggestions Dr. Guess made of using some of our own men in helping as teachers would be fine. Our own profession in Anderson have felt like it has helped us and we feel like it has been a worthwhile effort.

The Chair: Any further discussion? If not we will receive it as information and pass to the next. We have with us Dr. H. Grady Callison, who has done an excellent job in his work as Chairman of the Committee on Civilian Defense. I would like to call on him at this time. (Applause) Dr. Callison.

Dr. H. Grady Callison: The title of the committee of which I was supposed to be Chairman, was that of Home Defense. Home Defense is an individual thing. It is something that concerns each of us and especially does it concern the Medical practitioner of the State of South Carolina. The best I can do for you this evening is to outline briefly just what we have tried to do so far in establishing Home Defense throughout the state. It is a tremendous job, it is one which will require the services of every man in the State of South Carolina, not only the doctors but every other individual, men, women and children.

REPORT COMMITTEE ON HOME DEFENSE

On December 10, 1941, at the request of the President and Councilors of the South Carolina Medical Association, the Governor of South Carolina appointed a Chief Medical Officer for the Medical Division of the South Carolina Council for National Defense. On December 11th, a call meeting of the Council of the South Carolina Medical Association was held at the Jefferson Hotel in Columbia, for the purpose of selecting key medical men in each county of the State to be appointed by the local councils of defense, as Chief of Emergency Medical Services for each county. Members of the Council selected one man from each of the counties in his district for the above position. Following the meeting, letters were sent out to the Civilian Chiefs of each county, requesting that if previous appointment had not been made, that the selected man from each county be designated as Chief of Emergency Medical Services. In practically every instance, the man selected by the Council was named. In addition to the county men, the Councilors were designated as District Medical Officers. Three Assistants were appointed by the Governor to aid in the organization of the work throughout the State. An Advisory Committee to

the State Organization was appointed with representation from the following organizations; The Medical, Dental, Hospital, Public Health, Nurses, and Pharmaceutical Associations, and the Red Cross. On December 30th, a Statewide Meeting was held in Columbia and each county was represented. The organization was thoroughly discussed and all available information was distributed.

The Chief Medical Officer, appointed by the Governor, was not in a position to give full time to the position, consequently it was necessary to carry on the organizational work primarily by mail.

All counties have been organized and many of the county organizations have accumulated emergency medical supplies and equipment which will enable them to function. Surveys have been made to determine the additional needs for emergency medical equipment and supplies, and it is hoped that the office of Civilian Defense will be able to supply some of this equipment at a later date. Chiefs of Emergency Medical Services in the counties, however, have been urged to provide themselves with the necessary equipment from local resources and not to wait for these supplies from the office of Civilian Defense.

Surveys have been made of hospitals in the State to determine the number which have or plan to establish blood and plasma banks. Information has been distributed to eligible hospitals with regard to making application to the office of Civilian Defense for funds to aid in the establishing of blood and plasma banks. In this connection it has been ascertained that a number of hospitals throughout the state, which in themselves are too small to be eligible for assistance from the Federal Government, have established or are in the process of establishing blood and plasma banks of their own accord. Diagrams showing the operation of emergency medical services have been furnished to all county chiefs and the plan of operation has been outlined in medical publications. An article appearing in the May 9th issue of the American Medical Journal—pages 185 to 193—entitled "Central Control and Administration of Emergency Medical Services," gives in detail, information of value in this work.

It will be necessary for the Chief Medical Officer, Medical Division, South Carolina Council for National Defense, to give his full time to this important work. He is to be commissioned by the United States Public Health Service with a suitable rank and is to give his entire time and efforts to completing the organization, to stimulating interest in the preparation for emergency work, and in arranging hospitalization and care for casualties whether from sabotage or direct enemy action.

Respectfully submitted,

H. Grady Callison, M.D., Chairman

I do feel we must wake up and realize America is at War, and whether we like to think of it or not the battle front is not altogether in Europe or

Asia or the South Pacific or the East Pacific, it is all around us and it is up to us as medical men, men of a profession, men who should be leaders in their communities, to take this thing over and put it over in fine style. We never know when something will strike us; we are bound to have some token bombings and whether or not we are called upon it is up to us and we should be prepared.

The Chair: Is there any discussion?

Dr. Cain: (Recognized by The Chair) I would just like to ask the Chief Medical Officer a question. I know he has been working very hard throughout the State, particularly in connection with individual communities, but I wonder whether there has been any work done on the relief of one community by another, such perhaps as a circulating team from one city, available to answer calls of another city on short notice. It seems to me that should be something which should be considered and I have not up to this time heard any discussion of it. Dr. Stokes called me on the phone a few days ago and asked did I know if such a thing had been contemplated and if anything had been done about it. I think perhaps it has been considered but if it has not been I think some action in that direction would be most timely.

The Chair: Dr. Callison, can you answer that?

Dr. Callison: That is a part of the major plan. It is planned that all of these organizations shall be standardized and all of the materials shall be interchangeable and that one community has the privilege and right to call on another community for assistance at anytime. That is one of the things that has been stressed throughout the program and we hope to be in position to furnish all of the assistance necessary for any community in the State and even to communities outside of the State, if necessary.

The Chair: That completes the committee reports and we come to the head of "New Business." Is there any new business to come before the House? I believe Dr. Hugh Smith has some business. Dr. Smith.

Dr. Hugh Smith: Do you want to take up the Report of Council?

The Chair: Yes sir.

Dr. Smith: Gentlemen, I think most of us were here when I offered recommendations of the council for your action tonight. Dr. Truluck suggested we postpone action until tonight. The Council recommended:

1. In regard to the Naturopathic Practice Act, Council recommends to the House of Delegates that the Association, through its officers and the Legislative Committee, take whatever steps necessary to have this bill revoked.

2. That the Fourth District be divided into two districts as follows: (1) Greenville, Anderson, Pickens, and Oconee; (2) Spartanburg, Union and Cherokee.

3. In view of the uncertainty of our present national and local situation and of the unexpected expenses, which have occurred and no doubt will continue, Council recommends:

1. That the dues of the State Medical Association be raised to \$10.00 per year; and

2. Since this increase in revenue can not be evident until 1943, that all members of the Association be asked to make a voluntary contribution of \$4.00 for the Current Year. This money will be retained by the Treasurer and expended only on the advice of Council.

Dr. Smith: I would suggest that you act on these one at the time.

The Chair: You have heard Dr. Smith's report from Council and he has suggested, and I think it would be a good idea, that we act on these one at the time. I hear no objection?

(Dr. Smith reads 1st recommendation again.)

Dr. Kenneth Lynch: I move the recommendation be adopted. (The motion was seconded. The Chair asked for any discussion.)

Dr. Tom Pitts: Mr. President, it is an easy thing to pass a resolution to have a bill revoked and quite another matter to go to the Legislature and get that accomplished. It is going to take a tremendous amount of work and money, as I stated before, and no small committee and no small group of officers can accomplish this. It goes back to the same old thing that you can do more with the Senator from Orangeburg than all of the committee. And Julian Price can do more with the Senator from Florence than we can here. This is a big order. You are not only going to be up against opposition that these people will exert (and that will be tremendous) but you will be up against the opposition that will be offered by all of the other sub-orders of the medical healing art. I think you had better consider the expense as one of the major items before you casually pass this by.

The Chair: Is there any further discussion or suggestion.

Dr. Hugh Smith: May I state this.—We realize all that Dr. Pitts says and recommend that this bill be revoked, if possible. And, one of the thoughts behind the third recommendation is asking for increasing the dues and will require the cooperation of the House of Delegates, as far as possible. I think Council feels very definitely and I am sure any of you who heard that report, that this particular practice act is perhaps one of the most dangerous ones setting up a Board. It will require money and it will require work and that leads up to our third recommendation for increased dues and the voluntary contribution this year.

The Chair: Is there any further discussion?

Dr. Weston: As I recall, a similar situation arose in 1913 as to whether or not the relationship, as then existed, between the State Medical Association and the State Board of Health should continue to

exist. The House of Delegates at that time handled it through its individual members, just as Dr. Pitts suggested. A committee was appointed from each county to see its representative and that arrangement worked out splendidly, and I think that is the plan that will have to be adopted now in relation to this matter because the State Legislature is so constituted at this time that I believe it is the only means unless you have an enormous amount of money to spend.

The President: Is there any further discussion? If not are you ready for the question? All in favor of the motion.

Dr. Weston: I will offer that as an amendment, that the President appoint a Committee from each county in the State to solicit its members in the Legislature, in addition to what has already been contemplated being done.

Dr. Kenneth Lynch: I accept the amendment.

Dr. Hugh Smith: I think, in addition to that, after those committees are appointed they should be thoroughly acquainted with what it is. I haven't the slightest idea of what that bill is. I never heard of it. I think that should go along with it, an educational program to the Committee.

The Chair: Is there any further discussion? (No answer). All in favor of the resolution and the amendment signify by saying "aye." All to the contrary signify by saying "no." (The motion was passed unanimously.)

That brings us to the second recommendation. (Dr. Smith reads the second recommendation.)

The Chair: What is your pleasure?

Dr. Tom Pitts: I move the recommendation be adopted. (Motion was seconded.)

The Chair: Any discussion?

Dr. Weston: I would like to hear an explanation of this recommendation. (Dr. Smith gives the explanation).

The Chair: Does that answer your question, Dr. Weston? (Dr. Weston answered "yes.") Is there any further discussion? If not, all in favor of this resolution signify by saying "aye." "Aye." Contrary opinion, "no." (No answer). It is so ordered.

Now, the third recommendation. (Dr. Smith read the third recommendation).

(Motion for adoption was made and seconded.)

It is moved and seconded that we adopt the recommendation, is there any discussion?

Dr. Price: It might be interesting to know that in North Carolina they employ legal advice, the best legal brains they can, in Raleigh. They pay \$400.00 a year to a lawyer there and he keeps his finger on the pulse of the legislature and notifies the Council or State Medical Association when anything is coming up. And they have found this invaluable. That is also the practice in other states. Many have executive secretaries who have spent their time lobbying for the State Association. In South Carolina last year to protect ourselves we spent the sum

total of \$50.00 that went to Dr. Davis for some telephone calls and some other expense. If we are going to protect ourselves we must have some money to employ legal talents.

The Chair: Is there any further discussion? If not all in favor of the motion signify by saying "aye." "Aye." Contrary opinion, "no." (No answer.) It is so ordered.

We are still under the head of "New Business."

Dr. Wilson, Jr.: (Recognized by The Chair) We have had a long meeting and I don't want to make it much longer. I remember in Charleston in 1934 we had a meeting of the House of Delegates, it began at 8:00 o'clock in the evening and lasted until 3:00 A. M. At Myrtle Beach we began at 9:00 A. M. and lasted until 6:00 or 7:00 P. M. In order to expedite further meetings I would therefore make the following suggestion, as a change in procedure. I therefore move, Mr. President, that with the exception of the reports of the officers and of the Council, committee reports be presented, in full, one month before the meeting of the House of Delegates; that they be published in the Journal and only the specific recommendations, contained in these reports, be presented to the meeting of the House of Delegates for action. (Applause)

The Chair: You have heard Dr. Wilson's resolution or motion. (Motion was seconded from the floor.) Is there any discussion?

Dr. Tom Pitts: I hate to bob up all the time. Next year I will be where you are, Mr. President, and I will be just as tired as you are when night comes. I am wondering if we couldn't do without some of these committees, these fellows have worked hard and given good reports, but, as I sat there thinking the matter through, I don't know how much better off the Association is up to now. Maybe we have become familiar with some of it but I would like, as the incoming President, to have the power and privilege of pruning some of these committees,—not the personnel, but quantity and hope not quality.

The President: Is there any further discussion? (No answer) If not, all in favor of Dr. Wilson's motion please say "aye." "Aye"—Contrary opinion, "no." (No answer) It is so ordered.

Is there any further business?

Dr. Young: I expect all of us have heard in recent weeks that the University of Georgia Medical Department has been appraised by the Association of the Medical Colleges as being no longer a Grade-A Medical School. Those of us who live just across the river and who are acquainted with the work the University of Georgia is doing, don't hold that opinion. We feel that the school is growing and that it in every way merits a Grade-A rating. And, I suspect every man in here knows that possibly there was some politics involved in that demotion which the University of Georgia received at the hands of the rating agency. I would like to make

this resolution: "Resolved that we instruct our delegates to the American Medical Association meeting to assist delegates from the Georgia Medical Society in every way possible in their efforts to have the University of Georgia Medical College restored to its merited Grade-A rating among medical colleges." (Applause)

The Chair: You have made that as a motion, Dr. Young?

Dr. Young: Yes sir.

The Chair: Is there any second? (Motion seconded from the floor.) Is there any discussion of this resolution or not? If not, all in favor of this motion signify by saying "aye." "Aye." Contrary opinion, "no." (No answer) It is so ordered.

The Chair: Is there any further business?

The Secretary: Those of you who read the Journal probably noticed the proposed revision of the Constitution and By-Laws of our State Medical Association. The last Constitution was written in 1913. Since that time certain changes have been made and in order to bring it up to date a Committee was appointed, consisting of the Chairman of the Council, the President-Elect of the Association, and myself to re-write the Constitution. This was done and it was printed in the Journal. According to our constitution these proposed changes must lie on the table one year before they can be adopted. Now, the question that comes up is would it be sufficient to have had these printed in the Journal, where everybody could see them, would that constitute lying on the table one year, or must these be read in toto tonight?

Dr. Desportes: (Recognized by The Chair) I think every member gets the Journal and has already read it or still has the Journal and can read it. I move we accept the publication in the Journal as official to the House of Delegates and that it constitute lying on the table for one year. In other words we accept it without reading tonight and if delegates do not know what it is they can go home and read it.

(Motion is seconded by Dr. Wilson, Jr.)

The Chair: Is there any discussion? If not all in favor of Dr. Desportes' motion signify by saying "aye." "Aye." Contrary opinion, "no." (No answer) It is so ordered.

Is there any further business?

Dr. Young: (Recognized by The Chair) The other day at the meeting of the Anderson County Medical Society a resolution was adopted and at the request of some of the members of our society I was asked to present it before the House of Delegates and with your permission I would like to read that.

In view of the stupendous task that confronts our country in waging war throughout the world, we, the members of the South Carolina Medical Association join other patriotic citizens in declar-

ing our willingness to contribute an all out effort in the service of our country.

Realizing the peculiar value of physicians' skills to the armed forces of our country as well as to the civilian population we heartily endorse the strenuous and prolonged efforts which the leaders of American Medicine have made and are continuing to make in conjunction with the Army and Navy to wisely and fairly distribute the medical personnel of our country between the armed forces and civilian population.

As an expression of this endorsement, we, the members of the South Carolina Medical Association who are assigned to duty at home do hereby agree to make thoughtful effort to conserve the interests of those of our members who are assigned to duty with the armed forces. Specifically we agree to contribute to a cash pooled fund one-fourth (1-4) of funds collected by us for services rendered to patients of doctors who are in the service.

We recommend to the component Medical Societies that this resolution be approved and adopted by them and that in each county society a committee be appointed to work out detailed plans for the practical application of this resolution.

Dr. Young: Mr. President, I move the adoption. (The motion was seconded.)

The Chair: Is there any discussion? If not, all in favor of Dr. Young's resolution signify by saying "aye." "Aye." Contrary opinion, "no." (No answer) It is so ordered.

Is there any further new business? If not, we will have the Report of the Committee on Resolutions.

Dr. Desportes: Committee on Resolutions. (1) The Committee on resolution recommend the Committee on the Control of Cancer be discontinued and their duties added to the Committee of South Carolina Cancer Commission. The Cancer Commission has authority to treat as well as educate people on cancer.

(2) The Committee recommendations on Medical Economics recommend a committee be appointed by the President of the South Carolina Medical Association to look into the matter of reducing costs of medical education and to consider the matter of reducing the amount of study necessary for graduation as a general practitioner as compared to that necessary for one who expects to devote his time to a specialty.

(3) We recommend that steps be taken to restrict or outlaw the sale of concentrated lye in South Carolina.

The Chair: You have heard the Report of the Resolutions Committee. What was your first resolution?

Dr. Desportes: To abolish the Cancer Committee.

The Chair: Do I hear a motion that we abolish the Cancer Committee and that their work be added to that of the South Carolina Cancer Com-

mission? (The motion was made and seconded.) All in favor signify by saying "aye." "Aye." Contrary opinion, "no." (No answer) It is so ordered. (The second recommendation is reread to the House.)

The Chair: I don't agree with everything in that. I feel the general practitioner should have a lot more liberal an education than a so-called specialist. The general practitioner is intrusted with the whole body.

I think that second section is open to a lot of discussion. What is your pleasure.

Dr. Wilson: (Recognized by The Chair) Suppose the South Carolina Medical Association desires to and modifies the curriculum of the school to adapt it to the general practitioner on the one hand and the specialist on the other hand. The Standards of medical education are set by the Association of American Medical Colleges and by the Council on Medical Education. This association can do nothing, it makes no difference what their recommendations may be. The National bodies are going to set the standards for us to follow and regardless of what we are to think we are obliged to follow or else our college will be closed. It seems to me that resolution will not do, I therefore move it be not passed. (Motion was seconded.) (Applause)

Dr. Wilson: I should have said that I move the motion be not adopted. (Motion was seconded.)

The Chair: All in favor of that motion just made by Dr. Wilson signify by saying "aye." "Aye." Contrary opinion, "no." (No answer) It is so ordered.

(Dr. Desportes read again the third resolution, in regard to the sale of concentrated lye.)

The Chair: What is your pleasure on the third resolution? (Upon request it is read again.) Do you wish to do anything about that?

Dr. Hayne: (Recognized by The Chair) We have on the State Board of Health a pharmacist. Do you not think it would be possible to refer that through him to the pharmaceutical association and through them get some method of so marking concentrated lye as to make apparent what it is (poison that is) so that it will not be used accidentally? It seems you can't outlaw concentrated lye for the reason it is used by housewives, particularly in the country, for the use of cleaning floors. It would be hard to outlaw it, but if put up in a conspicuous package so that it would be a known poison, and be kept away from the children, maybe that would be some insurance. I have seen some cases of poisoning from lye where the child picked up the can that had lye in it and got a constriction of the esophagus as a result. That does happen but it seems we could find some method besides outlawing it.

The Chair: Any further discussion? Do I hear a discussion?

Dr. D. L. Smith: The use of concentrated lye probably saves more lives each year by sterilizing the homes of people, and I think it would be un-

wise to outlaw it. I think we would have a rise in disease if we did away with lye and I don't suppose there are two or one child a year in South Carolina that ever gets into trouble with lye. I think I have seen about three cases in a number of years, not in this state but in another state, and I think it would be unwise to pass a law of that kind outlawing it, with nothing else to take its place.

The Chair: What disposition shall we make of this?

Member: I move the recommendation be rejected. (Motion was seconded.) Any discussion? If not, all in favor of the motion signify by saying "aye." "Aye." Those of contrary opinion "no." (No answer) It is so ordered.

Dr. Hugh Smith: (Recognized by The Chair) Mr. President and gentlemen, I would like to pay tribute for the Council and I am sure for every member of this House of Delegates to one member of this State Medical Association who has given wholeheartedly and unstintingly of his every ounce of service in the past several years. When I first came to the upper part of South Carolina to practice medicine I heard a great deal about a man in practice in a neighboring county. Years passed and I came to know him, for the past eight years I have worked with him in the Council and in the Medical Association and as president of this society and he is now serving you everyday of the week in a perfectly definite job that is taking a lot of his time, costing him money, and with very little thanks in it. The Council this afternoon has take upon itself the privilege and pleasure of presenting to this gentleman a small token of our esteem. I want to hand this to Buck Pressly, W. L. Pressley. (The entire House of Delegates rose as a body and applauded.)

Dr. W. L. Pressley: (Holding a leather brief case before him, which had just been handed to him.) This is very appropriate. When I got ready to start to Columbia this morning I was looking for a file case. I told my wife I almost had to have one, I didn't want to go into Columbia with the papers in a shoe box. This is certainly a great surprise to me and I wish to thank each and every member of the Council and members of the South Carolina Medical Society for this handsome gift.

The Chair: We are under the head of "Miscellaneous Business." Is there anything further to come before the Association? Hearing none we pass on to the Election of Officers. The first officer to be elected is President-Elect for our next year.

Dr. D. L. Smith: (Recognized by The Chair) I am not a good speaker to eulogize the candidate I wish to present. You know him so well, you love him as well as I do. It has been a privilege which I think I have long wanted this body to have, the opportunity to vote for this friend of ours, and I take great pleasure in nominating Dr. W. Atmar Smith, commonly known as Billy. (Applause)

Dr. Hugh Smith: It is with a real pleasure that I rise to second the nomination of Billy Smith of Charleston. (Whistling and applause.)

The Chair: Are there any further nominations? (A motion was made that the nominations be closed.)

Delegate: It is rather unusual that a man should be elected at the head of this association without opposition but in view of the personality and the ability and the lovable nature of the nominee I move the nominations be closed and the Secretary be instructed to cast the unanimous ballot for Dr. Billy Smith.

The Chair: All of you have heard the motion. All in favor of this motion signify by saying "aye." "Aye." And of contrary opinion "no." (No answer) It is so ordered.

I will ask Jim Fouche, and Billy Roth to escort Billy Smith up. (Applause)

Dr. Billy Smith: It certainly looks like a frame-up. I want to tell you gentlemen I am not unmindful of being president of this highly honored society. I thought probably you would wait a few years until I got a little older before you gave me this high office. I look forward with a good deal of apprehension to what I have to do. I had hoped I wouldn't have any more burdens put on me, and it is going to be a burden to do the job as well as those who have preceded me. All I can say—I will do the best I can. I am going to have the experience of the tutelage of Dr. Pitts for a whole year and maybe I will be able to hold up my end after that. (Applause.)

The Chair: We pass to the election of Vice-President.

Delegate: I would like to present for nomination the name of the man who has contributed to the scientific and other knowledge of our State. For Vice-President I nominate Dr. J. Warren White, Greenville. (The motion was seconded.)

The Chair: Any further nominations? All in favor of Dr. White signify by saying "aye." All of contrary opinion, "no." (No answer) He is clearly elected, it is so ordered.

Next the office of Secretary.

Dr. Hugh Smith: Mr. President I take great pleasure in moving the re-election of Dr. Julian Price to Secretary-Treasurer of our organization.

Dr. Wm. Weston: It gives me great pleasure to second that and I move the ballot close and that the gentleman be elected by acclamation.

The Chair: All in favor signify by saying "aye." "Aye." Dr. Price, you are clearly elected.

Dr. Julian Price: Mr. President, I appreciate very much this election. I will do the best I can. I would like to make one suggestion, however, with times such as they are and without any grey hairs coming out of my head, there is no telling what Uncle Sam will do to those of us under forty-five. I would like to ask that you elect an assistant Secretary who, should I be called into service, could take over.

Dr. Latimer: I nominate Dr. J. D. Guess, of Greenville as Assistant Secretary.

Dr. D. L. Smith: Wouldn't the Council take care of that without our electing anybody. I think the Council is better fitted to select a man to take Dr. Price's place than this body is. I mean there are fewer men, they can canvass the field better and if Dr. Price is called then the Council can step in and elect somebody to take his place. I think that would be wiser than this body electing a man at this time. I move we leave the election of the Assistant Secretary to Council.

(There was a second to Dr. Smith's motion.)

The Chair: All in favor of Dr. Smith's motion signify by saying "aye." (It was unanimously carried.)

Now, we come to the election of Council. The Councilor from Second District, Dr. Durham.

Dr. Weston: Mr. President, it gives me great pleasure to nominate Dr. Durham to that office. (This motion was seconded.)

The Chair: Are there any further nominations, if not all in favor of Dr. Durham signify by saying "aye." "Aye." Those of contrary opinion, "no." (No answer.)

Dr. Weston: In order to make this constitutional I ask that the secretary cast the ballot. It is constitutional that all elections shall be by ballot.

The Chair: We must elect a Councilor for the Fourth District. Dr. Hugh Smith is the councilor at present.

Dr. Wilkinson: I ask to make a nomination, Dr. Smith asked me to make this nomination. I would like to nominate Dr. Jack Parker. Dr. Smith says he might not be here.

Dr. Smith: I would like to second that nomination.

The Chair: Are there any further nominations?

Dr. Young: The proposed District, Greenville, Anderson, Pickens and Oconee constitute the new Fourth District of the Medical Society. I would like to place a nomination for Councilor from that District, a member of the Anderson County Medical Society. I think he has been a member of this association about 23, 24 or 25 years. I know he has missed scarcely a meeting, he is what we call a good society man and I believe he would make an excellent councilor for this district. I would like to place for nomination the name of J. B. Lattimer. (The nomination of Dr. Lattimer was seconded.)

The Chair: Any further nominations? If not, are you ready to vote? How shall we vote, by ballot?

Dr. Price: We will have to vote by ballot.

The Chair: I will appoint Dr. Guess and Dr. Waring as tellers.

You will cast your vote for the Councilor for the Fourth District for Dr. Parker or Dr. Lattimer.

We will come to order and go on with the election of the Councilor for the Sixth District, Dr. James McLeod, Florence.

Dr. W. R. Mead: I would like to nominate Dr.

McLeod to succeed himself.

Dr. Dibble: I second that nomination.

Delegate: I move the nomination be closed and that the secretary cast the ballot.

The Chair: All in favor of Dr. James McLeod as Councilor for the Sixth District, as moved by Dr. Mead, signify by saying "aye." "Aye." All contrary votes, "no." (No answer.)

Dr. Hugh Smith: I have the painful duty to offer the resignation of Dr. Kelly, now representing the Seventh District. We have done everything we could to persuade him not to do this. He was elected last year against his wishes and he wrote to Council resigning and asked that we consider his resignation and ask if you will ask the House to accept his resignation, and you have to ask them to elect a councilor for one year for that district. And, we have a new Ninth District.

The Chair: What is your pleasure?

Dr. Pressley: I would like to voice a plea that Dr. Kelly remain. It may be selfish, since he renders an invaluable service in the Procurement and Assignment Office and gives fine service to his district in the capacity of advisor. I move we do not accept his resignation and ask that he stay with us.

Dr. James McLeod: I would like to second Dr. Pressley's motion.

The Chair: Any discussion?

Dr. Kelly: I have been on the Council for a good many years so I don't think I have ever missed a meeting, but with my age (laughter) I request that my resignation be accepted. It is a physical impossibility for me to keep up with it. I ask you to elect somebody else, who can be more active and I do believe there are men in my District who can handle it better.

Dr. Weston: I rise to a point of order. May I suggest you move him out of order?

The Chair: I am sorry, Dr. Kelly. All in favor of the motion that we do not accept Dr. Kelly's resignation please signify by saying "aye." "Aye." Those of contrary opinion, "no." Dr. Kelly, you are elected twice.

Now, we come to the election of the Councilor for the Eighth District, Dr. L. P. Thackston, of Orangeburg. He is now in uniform.

Delegate: I nominate Dr. Thackston to succeed himself. (This nomination is seconded.) (Also a motion was made that nominations be closed.)

The Chair: Any further nominations? If not, all in favor signify by saying "aye." Contrary opinions "no." (Dr. Thackston was unanimously elected.)

The Chair: The result of the vote in the Fourth District: Lattimer 28; Dr. Parker 14. Dr. Lattimer is elected.

Dr. D. L. Smith: There is one more councilor from the new Ninth District, Spartanburg, Union and Cherokee Counties. As a member of that section I wish to nominate Dr. W. W. Boyd of Spartanburg. (The nomination is seconded.)

The Chair: All in favor of Dr. W. W. Boyd signify by saying "aye." "Aye." All of contrary opinion, "no." Dr. Boyd is elected.

Dr. Price: In view of the fact that Council no longer has a Chairman, since Hugh Smith has asked somebody to take his place, I would like to call a meeting of the newly elected Council in Room 409 so that we can organize for the coming year.

The Chair: We will pass on to the State Board of Medical Examiners. We have a Second District to elect, Dr. W. R. Tuten, Fairfax, S. C.

Delegate: I nominate Dr. Tuten for election. This nomination was seconded. There were no further nominations.)

The Chair: The chair called for a vote and Dr. W. R. Tuten was elected unanimously.

The Fourth District to succeed himself, Dr. George Wilkinson, Greenville.

Dr. Smith: I nominate Dr. Wilkinson to succeed himself. (This nomination was seconded and a motion made the nominations be closed. The Chair put the motion to a vote and Dr. Wilkinson was unanimously elected.)

The Chair: Now, the State Board of Examination and Registration of Nurses. Dr. J. D. Guess of Greenville.

Dr. Hugh Smith: I would like to nominate Dr. J. D. Guess and move he succeed himself as a member of that board. (This motion was seconded. There were no further nominations.)

The Chair: All in favor of the motion made by Dr. Smith please signify by saying "aye." "Aye." All of contrary opinions, "no." (No answer) I instruct you, Dr. Price, to cast that vote.

Dr. Price: I have a letter from T. D. Dotterer, who says he may be called into active duty in the army in the near future and he suggests we elect someone to take his place on the State Board of Nurses Examination and Registration. I would suggest that we empower the Council to elect a successor to Dr. Dotterer if and when he is called into the service.

The Chair: You heard Dr. Price's motion, do I hear a second? (It was duly seconded.) All in favor of disposing of this question by allowing Council the privilege of electing someone in his place in the event Dr. Dotterer is called into service please signify by saying "aye." "Aye." Contrary opinions, "no." It is so ordered.

Now, a delegate to the A. M. A. Dr. Cannon was elected and was our delegate last year and the year before.

Dr. Wilson: When we are in trouble we turn to old men. We have just elected to be President-Elect of the Association Dr. Billy Smith. We should have a man, I therefore move the renomination of J. H. Cannon. (The motion was seconded.) There were no further nominations.

The Chair: All in favor of Dr. J. H. Cannon acting as our delegate to the A. M. A. signify by

saying "aye." "Aye." Contrary "no." Dr. Cannon is elected.

The Chair: There are seven (7) to elect on the Executive Committee of the State Board of Health.

Dr. Desportes: I move you read a list of those men and I would like to move we nominate each one to succeed himself.

The Chair: Dr. Kenneth Lynch, Charleston, S. C. (He was nominated to succeed himself.)

2nd. Dist. Dr. L. D. Boone, Aiken, S. C. (He was nominated to succeed himself.)

3rd Dist. Dr. W. L. Pressly, Due West, S. C. (He was nominated to succeed himself.)

4th Dist. Dr. D. L. Smith, Spartanburg, S. C. (He was nominated to succeed himself.)

5th Dist. Dr. W. R. Wallace, Chester, S. C. (He was nominated to succeed himself.)

6th Dist. Dr. W. R. Mead, Florence, S. C. (He was nominated to succeed himself.)

Dr. F. M. Routh, Columbia. *At Large.* (He was nominated to succeed himself.)

Dr. James McLeod: I second those nominations. (Motion was made that the nominations be closed.)

The Chair: You have heard the nominations and heard the motion the nominations be closed, all in favor of closing the nominations signify by saying "aye." "Aye." (Carried unanimously.)

All in favor of these men as read being reelected, please signify by saying "aye." "Aye." It is so ordered.

The Chair: One more thing—where will we meet next year?

Dr. D. L. Smith: Mr. President, we are far from bullets around Spartanburg and would be glad to have you come to see us.

The Chair: Dr. Smith has invited us to come to Spartanburg next year. We want to get away from the coast. Do I hear a motion we accept?

Delegate: I move we accept the very kind invitation of the Spartanburg Society. (Motion was duly seconded.)

The Chair: You have heard the motion and heard it seconded that we accept this invitation to Spartanburg for next year. All in favor signify by saying "aye." "Aye." All contrary opinions, "no." (No answer.) (The invitation was unanimously accepted.)

The Chair: Is there anything further to come before the Society?

There was no further business and the House of Delegates adjourned at 10:00 P. M.

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KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

CASE OF DR. ROBERT WILSON, JR. AND DR. F. G. CAIN

ABSTRACT NO. 453

Student N. C. Price (presenting):

Present illness: 3 months prior to admission, this 42 year old white man developed a severe epigastric pain, which did not radiate, was constant in character and seemed not to be affected by foods. Pain lasted one week and required morphine for relief. Was associated with increasing "jaundice," constipation, and weakness; these complaints lasted and were present on admission. As jaundice and itching of the skin increased stools became chalky or clay colored. No history of bloody or tarry stools. No chills or fever. There was a weight loss of 45 pounds during the 3 months prior to admission. Slight nausea, no vomiting.

Past History: During the past 3 years irregular attacks of epigastric pain and "jaundice" developed which patient thought were associated with moderate drinking bouts. Only slight gaseous eructations but considerable flatus. No food idiosyncrasies. Appetite good up to present illness.

Physical Examination: T. 98.6. P. 70. R. 20. Weight 105 lbs. Showed a well developed, thin white man. Skin: Generalized jaundice of moderate intensity. Skin loose and weight loss apparent. Head and Neck: Sclera icteric, pupils react to light and accommodation. Many teeth missing, nose and throat normal, no glandular abnormalities. Chest: Size and shape normal, expansion equal, lungs clear to percussion and auscultation. Heart: not enlarged. Sounds distant but of good quality, regular in rate and rhythm. Abdomen: Slightly distended, no tenderness or rigidity. There was a mass in the R. U. Q. which extended from the right costal margin down six fingers in the mid-line, firm to palpation; no other masses or viscera palpable. Extremities: Normal.

Laboratory Findings:

Blood on Admission: RBC 4,900,000. WBC 6,600. Hb. 14 gms.

Urine on Admission: Showed 4 plus sugar. Sp. gr. 1.030. Positive for bile on 8-3-41. All other urinalysis normal, except for varying amount of sugar.

Coagulation time 4 min. Bleeding time 1½ min. Blood sugar on admission 245 mg. Blood urea nitrogen 15 mg. Blood cholesterol 800 mg. Prothrombin activity 88% of normal. Stool examination—light brown, no blood, no bile.

Hospital Course: Remained afebrile during ad-

mission. Placed on a diabetic diet with protamine Zinc insulin. A laparotomy was planned when general condition permitted, but mass in the upper right abdomen decreased in size and operation deferred.

Second Admission: Admitted 2 months and 11 days after first discharge. Diabetes regulated by diet and insulin, but all complaints same as on previous admission.

Physical Examination: Head and neck, chest and heart same as on previous admission. Abdomen showed a visible mass in RUQ which was smooth, firm and extended from right costal margin to 1 cm. above the umbilicus and 2 cm. to left of mid-line. Non tender and fixed. Veins in lower abdomen moderately distended.

Laboratory Findings: WBC 14,000 and fell to 9,000 3 days after admission. Urine negative with exception of varying amounts of sugar. Coagulation time 2 and 3-4 min. Bleeding time 1 min. Icterus index 34.

Hospital Course: Afebrile on admission and remained so for the first 4 hospital days. An exploratory laparotomy was performed on the 4th day. No organs were removed. After operation patient remained unconscious, temperature low and in shock. Pulse became weak and irregular, breathing poor with a low respiratory rate. Blood sugar dropped to 16 mg. 12 hours post operative, despite intravenous glucose therapy immediately following the operation and on 3 other occasions. Blood sugar rose to 200 mg. 24 hours post-operative. Never regained consciousness and patient died 30 hours after operation.

Dr. Cain (conducting): Mr. Mead,* what do you make of this case?

Student Mead: I think it is extremely puzzling. There are two conditions which I have considered, carcinoma of the head of the pancreas and stones in the main pancreatic duct. The obstructive jaundice, which is the type we have here, also leads one to consider the gall-bladder as the source of the mass. The jaundice may have been caused by some intrinsic disease of the gall-bladder or by some external factor such as carcinoma of the head of the pancreas. We would expect an enlarged palpable gall-bladder in the latter condition rather than with the presence of gall-bladder calculi. The intermittent jaundice and epigastric pain over a three year period make it highly probable that stones were present. On the other hand, loss of weight, anorexia, decrease in digestive ability and evidence of decreased insulin production point more to carcinoma of the pancreas.

Dr. Cain: Mr. Mead, if the obstructive jaundice

was produced by carcinoma of the pancreas, do you think it likely, that the jaundice would have improved?

Student Mead: No, I do not and this problem makes me lean toward the consideration of stones in the common duct.

Dr. Cain: You think then that obstruction of the common duct by calculi is the most likely diagnosis?

Student Mead: No sir, I merely think it one of the possibilities.

Dr. Cain: Mr. Guyton, what do you think about it?

Student Guyton: I do not think carcinoma of the head of the pancreas can be ruled out, even though the jaundice is usually constant and progressive. I cannot discard chronic pancreatitis, either, particularly since the condition is usually associated with cholecystitis and stones. Last of all, there is a malignancy of the common bile duct which cannot be overlooked completely.

Dr. Cain: Can you explain the mass, if stones were the cause of the obstruction?

Student Guyton: No, I can't. You don't usually find a palpable mass, because stones are associated with chronic cholecystitis and the chronic inflammatory changes prevent dilatation of the gall-bladder wall. The mass might be gall-bladder, however, enlarged by carcinoma or by some extrinsic obstruction.

Dr. Cain: That was my object in asking the question. You cannot explain the mass on the basis of stones and I think we should find one lesion that we can hang all our symptoms on.

Student Guyton: From the standpoint I would say that carcinoma of the head of the pancreas is most likely.

Dr. Cain: Do you think that will explain the blood sugar levels?

Student Guyton: No, I don't think it will.

Dr. Cain: Does any member of the staff have any suggestion or comments?

Dr. Wilson, Jr.: I would like to ask Mr. Rogers to discuss the cause of this man's death.

Student Rogers: The patient went into post-operative shock. Diabetics are conceded to be poor surgical risks.

Dr. Wilson: Do you think he would have had post-operative shock with Dr. Cain operating? (Laughter.)

Student Rogers: Yes sir, I believe he would have gone into shock no matter who operated.

Dr. Cain: There were many puzzling features about this. The original X-ray diagnosis was probably carcinoma of the stomach, but we did not feel that he had a gastric malignancy. It was also hard to conceive of him having carcinoma of the liver or pancreas, when the jaundice was decreasing and he was gaining weight and feeling better.

Student McIver: I have one suggestion to offer as a last resort. I think this man probably had a

cyst of the pancreas, although such things are uncommon. Another possibility and an even more uncommon entity would be a mesenteric cyst. It seems that a cyst of either type would fit into the clinical picture better than certain other possibilities. The man apparently did not have carcinoma. He had had symptoms of three years and yet he had a very good hemoglobin level and erythrocytes count, his appetite was good and he had only lost some weight, which could be accounted for by his diabetes. The fact that the mass was smooth and decreased in size also leads one away from carcinoma in that region.

I believe that the pressure caused by the cystic mass must have impeded the blood supply to the pancreas to some extent, and relief of the tension at operation caused the renewal of an adequate blood supply, so that the pancreatic islands were suddenly able to release sufficient insulin into the

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patients system to cause him to go into hypoglycemic shock. This is a rare sequence of events, but I think it will explain this case.

Dr. Cain: Very true, Mr. McIver that is a good analysis, but why did the blood sugar go up again?

Student McIver: The measures instituted for the relief of the hypoglycemia may have sent his blood sugar back up, but by that time irreparable damage had been done to vital cells and he was beyond the pale.

Dr. Cain: I think you have a good idea. We ran through the gauntlet of diagnoses, without considering this possibility. At operation I found a large cyst of the head of the pancreas, which contained 300 c. c. of fluid. The cyst extended across the common duct and was probably causing considerable pressure there. The veins about the pancreas, duodenum and lesser curvature of the stomach were engorged and dilated. The gall-bladder was not distended and the liver small with no special changes, except those changes in colon that one expects to find with jaundice.

Dr. Pratt-Thomas (demonstrating pancreas, duodenum, liver and gall-bladder): Now that Dr. Cain and Mr. McIver are finished, there is little for me to say. As you see the head of the pancreas is replaced by a thick-walled cyst measuring about 6 cm. in its greatest diameter. The entire pancreas is tough and fibrotic and the main pancreatic duct and its branches are dilated. The portion of the duct from the body and tail empties into the cyst, but the duct leading from the duodenal ampulla back toward the cyst burrows into the inferior portion of the cyst wall and no direct opening between the duct and cyst can be found. Tiny openings are present in the lining of the cyst and they are found to be tributaries of this portion of the duct and empty into it. Some calcareous material was found where the duct disappears into the wall of the cyst.

Microscopic examination reveals that the cyst lining, where it is preserved, consists of pancreatic duct type epithelium, so that the structure is a true pancreatic duct cyst. Whether it was caused originally by obstructive calculi is problematical, but possible. There is little pancreatic tissue remaining, the islets and acinar tissue both showing atrophy and replacement by fibrous tissue.

Mr. McIver's explanation of the hypoglycemia cannot be proved, but is as good as any.

DEATHS

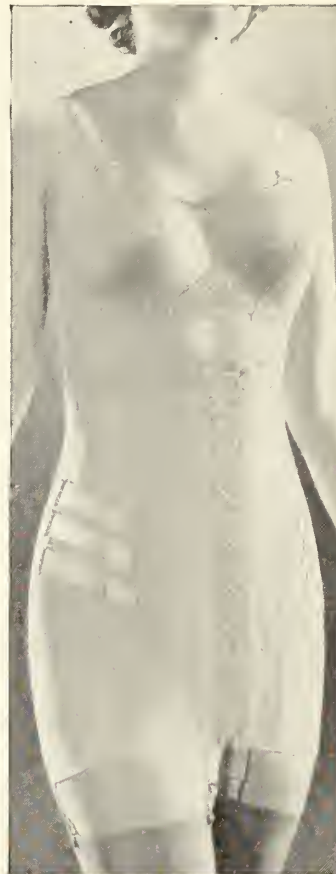
Dr. H. Clay Foster, 77, died at his home in Beaufort on May 22. A native of Augusta, Dr. Foster attended the University of Georgia School of Medicine and was graduated in 1900. He had practiced medicine in Beaufort for sixteen years. He is survived by his widow, Mrs. Hope Chandler Foster.

The Journal joins with the many friends of Dr. A. M. Wylie of Chester in expressing sympathy to him upon the death of his wife, Mrs. Elizabeth Henderson Hardeman Wylie.

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REPORT OF THE CONVENTION OF THE WOMAN'S AUXILIARY TO THE SOUTH CAROLINA MEDICAL ASSOCIATION

May 19, 20, and 21st, 1942

The seventeenth annual convention of the Woman's Auxiliary to the South Carolina Medical Association was held at the Jefferson Hotel in Columbia on May 19, 20, and 21st, with the Auxiliary to the Columbia Medical Society as hostess, Mrs. William Weston, Jr., General Chairman, Mrs. Frank C. Owens, Co-Chairman, Mrs. Richard M. Pollitzer, president, presided.

The convention opened with a student Loan Fund Committee meeting, May 19th at 8:00 P. M. This was followed immediately by the meeting of the executive board.

The House of Delegates convened Wednesday morning at 9:30 o'clock in the ballroom of the hotel. At this time reports were heard from officers, councillors, committee chairmen, and auxiliary presidents. These reports showed that the organization has had an unusually busy year, with practically all of the 258 members engaged in some phase of defense work. With the slogan "Every Doctor's Wife in Health Defense," each auxiliary planned and executed an interesting health program. One auxiliary sponsored a cancer control campaign at the request of the medical society; another concentrated on anti-tuberculosis drives and tuberculosis bonds; another sold crippled children's seals and showed health pictures. Through the efforts of one auxiliary an Emergency Hospitalization fund of \$3,500.00, and an anti-tuberculosis fund of \$325.00 were appropriated by the county legislative delegation. Others assisted at a hospital clinic during a shortage of nurses. Each auxiliary contributed to a Jane Todd Crawford Memorial bed, which will be given this year to Laurens County hospital. The Student Loan Fund Chairman

reported \$1,379.50 on hand, and Mr. Hugh H. Wells, of Holly Hill, was awarded a three year scholarship to the South Carolina Medical College. Mr. Wells was presented to the Auxiliary, and expressed appreciation of the loan.

One new auxiliary, composed of doctors' wives from Orangeburg, Bamberg, and Calhoun Counties, was organized this year. It made a splendid report. Many biographies of deceased physicians were collected. Columbia Auxiliary was awarded the Strait Historical Trophy. Greenville received the T. R. W. Wilson Publicity Trophy for the best scrap book. Greenville also won the Furman Health Trophy for the greatest health projects.

The following officers were elected:

President ----- Mrs. T. A. Pitts, Columbia
President-Elect-----Mrs. J. E. Orr, Seneca
1st Vice-President-----Mrs. J. W. Kitchen,
Liberty
2nd Vice-President-----Mrs. R. D. Hill,
Pacolet Mills
Recording Secretary----Mrs. David Adcock,
Columbia
Treasurer----Mrs. J. L. Sanders, Greenville
Historian-----Mrs. W. H. Powe, Greenville

The program meeting convened at 11:30 A. M. in the ballroom. Greetings, delightful music, an inspiring address by Mrs. A. F. McKisick of Greenville, State Chairman Woman's Division of the South Carolina Council for National Defense, Report of the President, Mrs. Richard M. Pollitzer, the Memorial service, and the installation of officers were the high lights of this meeting.

A beautiful luncheon was served at 1:30 P. M. in the main dining room of the Jefferson Hotel by the Columbia Auxiliary.

Between 5 and 6 o'clock in the afternoon, the visitors were again complimented with a delightful tea at the Governor's Mansion. Mrs.

R. M. Jefferies and the officers of the auxiliary received the guests.

The members of the Woman's Auxiliary joined the members of the Medical Association at 8 o'clock, and enjoyed a delightful banquet at the ballroom of the Columbia Hotel. A reception and dance followed.

Thursday morning the visitors were escorted on a tour of Ft. Jackson; and were again entertained with a charming tea at the home of Mrs. Frank C. Owen, President-elect of the Columbia Auxiliary.

(Mrs. R. M.) Cora S. Pollitzer.

BOOK REVIEW

PSYCHOLOGIC CARE DURING INFANCY AND CHILDHOOD

Ruth Morris Bakwin, B.A., M.A., M.D.,
New York, City

and
Harry Bakwin, B.S., M.D.
New York, City

Price \$3.50. Pp. 331, with 31 illustrations. New York: D. Appleton-Century Company, May, 1942.

This book was written "to interest and instruct the physician in the promotion of optimal psychologic health in the child." It is based on a thorough review of the literature and on the very extensive experience of the authors in private and hospital practice. The twenty four chapters cover a wide variety of topics, ranging from anorexia and enuresis to speech and the emotions. Disturbances of sleep and the sexual disorders are given some attention; but unlike many recent publications, sex and its perversions, is not permitted to exceed its proper bounds.

The work is comprehensive and sufficiently detailed, as well as clear and interesting. Furthermore, although the fundamentals of psychologic care is explained, the language is non-technical and the advice practical. For those who wish to delve deeper, or pursue certain aspects of this subject, there is a bibliographic list appended to each chapter. The volume is quite attractive and the paper and print are first class.

At this time when the public is almost constantly being bombarded over the radio and the magazines with bits of psychology, it is essential for the physician, and more particularly one attending children, to possess a basic and authoritative knowledge of this branch of science. In this new book he can find

clear-cut answers to many of the questions put to him by anxious and over-anxious mothers.

R. M. P.

June 9, 1942.

CARCINOMA AND OTHER MALIGNANT LESIONS OF THE STOMACH

W. Walters, H. K. Gray, and J. T. Priestly
W. B. Saunders Company, 1942. Pp. 576

This new book is a review of the vast experience of the Mayo Clinic on cancer of the stomach. All aspects of this important subject are thoroughly and clearly presented. Sixteen of the authors' colleagues contributed special sections. The illustrations are numerous and well chosen. The appendix of statistical tables and graphs based on 11,000 cases is a mine of information on the various aspects of gastric carcinoma, which causes 38,000 deaths annually in the United States. Physicians, to whom proper statistical methods are a mystery, will profit by reading Berkson's chapter on the calculation of survival rates.

F. E. K.

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The Diagnostic Significance of Various Types of Pain in Back Derangements

WALTER R. MEAD, M.D.

FLORENCE, S. C.

A surprisingly large percentage of any physician's patients consult him because of discomfort which is due to some derangement of the vertebral column. Their complaints are diverse, but usually justified by demonstrable pathological changes. Functional disorders are common in the cardio-respiratory system, in the gastro-intestinal tract, in the nervous system, but they are exceedingly rare in connection with the skeletal system. Since pain is the common denominator in all back disorders, it becomes of paramount interest to recognize some of the diagnostic peculiarities of this symptom. The pain arising from derangements of the back has characteristics almost as definite as the pain of angina pectoris, pleurisy, peptic ulcer and biliary colic, with all of which it is not infrequently confused. It is this very confusion which makes the problem of back pain not only one for the orthopedist but a problem for the surgeon, the family physician and the internist. If any justification is needed for my venturing into an essentially orthopedic field, that is it. Inquiry into the circumstances surrounding the initial appearance of pain, determination of the factors which aggravate or relieve pain, the exact localization of pain—these and a few other considerations which can be brought out quickly in a well taken history form the basis for fairly conclusive deductions regarding the nature of the skeletal abnormality.

Roughly speaking *senescent change* in the

vertebral column or *trauma* or a combination of the two is responsible for the great majority of painful backs. The pain in these conditions result chiefly from irritation of sensory nerve roots either within the neural canal as in protrusions of intervertebral disks or at the point of emergence of the nerve through the intervertebral foramina which is true of hypertrophic arthritic and osteoporotic disease of the spine. There are, however, many sensory nerve endings in the intervertebral disks themselves and in the posterior longitudinal ligament so that disease or injury of these structures does induce pain at the site of trouble in addition to that which may be caused by impingement on sensory nerve roots.

Under the heading of *senescent change* I refer to two entirely different processes. In one, the so-called hypertrophic spondylitis, the prominent feature is excessive bone formation probably resulting almost exclusively from mechanical factors—lessened elasticity of intervertebral disks with proportionate loss of their shock absorbing function, greater wear and tear on the articular surfaces of the bodies of the vertebrae and consequent heaping up of irregular spurs. The end result is encroachment on the structures in the intervertebral foramina. The second *senescent process* is characterized by serious decalcification of the vertebral bodies—senile osteoporosis—which proceeds to such a point that comparatively slight trauma produces collapse of one or more vertebrae thereby compressing the soft structures adjacent to the site of injury. The hyper-

(Read at Annual Session, S. C. M. A., May 20, 1942.)

trophic bony changes should be suspected in middle aged, stocky, florid individuals while osteoporotic changes more often occur in thin, elderly women.

The trauma which is responsible for so many back complaints is often quite trivial, usually indirect, and frequently lost sight of in the suffering which ensues. One of my patients suffered a compression fracture of a thoracic vertebra by simply lifting a lid from the top of the stove; another had a ruptured intervertebral disk as the result of climbing awkwardly out of the bathtub. While a direct trauma from a fall is not infrequently responsible, such incidents are readily remembered and offered spontaneously in history taking. The lesser accidents must be sought for diligently and never discounted because of their minor character. When trauma results in rupture of an intervertebral disk with extrusion of cartilaginous substance back into the neural canal, the sensory roots of the spinal nerves in that vicinity, usually L 4 and L 5, are drawn taut by impingement on the projecting mass.

The mode of onset of the pain provides a very important clue to the underlying trouble. If the first pains are rather vague, unimpressive and not particularly disabling but over the course of weeks or months build up to the point of causing real annoyance, the best bet is hypertrophic spondylitis. On the other hand, if the patient can point to one particular moment on one particular day when the pain started, it is a foregone conclusion that trauma in some form—tearing of the annular ligament of an intervertebral disk, rupture and protrusion of a disk, or collapse of an osteoporotic vertebra—is responsible for the complaints. It takes no medical omniscience to reach such a conclusion but as a matter of fact, that point is too often overlooked. Long, expensive and futile searches for foci of infection are frequently undertaken when ordinary common sense would dictate that no possible combination of virulent micro-organisms could invade the joints of the vertebral column in such cataclysmic fashion.

Furthermore considerable light can be shed on the nature of the back derangement by knowing what the patient was doing when the pain

first appeared. A twisting strain or a violent lifting effort in a bent forward position is most likely to result in disk protrusion while comparatively slight blows on the back, the jar of a bump of an automobile, in fact the most trivial injury imaginable will often serve to break down a fragile osteoporotic vertebra in elderly women. It is important also to learn if the patient has had a good deal of back trouble for some time prior to his current bout of pain. Recurrent attacks of "lumbago" usually signify one of two conditions—either long standing hypertrophic changes of the articular surfaces of the vertebrae or the torn annular ligament of a disk whose weakened fibers might have difficulty in retaining the nuclear material in the event of another bit of violence.

The conditions which aggravate and relieve the pain afford valuable evidence for a judgment regarding the pathological condition in the spine. Persons suffering from hypertrophic changes in the cervical spine will almost invariably complain that the *assumption of a fixed position* for any length of time will aggravate the pain which they have either in the occipital area, in the neck itself or over the shoulder and down the arm. They find that watching the moving picture screen, driving an automobile and particularly resting the head on a pillow at night will induce acute discomfort. Characteristically they wake up every few hours during the night to get relief by flexing and extending the neck and massaging it vigorously. Relief of back pain which comes with the *recumbent position* in bed is most pronounced in individuals suffering from collapse of a vertebra while the very same position is quite apt to accentuate the pain due to a protruded intervertebral disk. Various *movements of the spine* as induced by every day procedures serve to localize the site of trouble rather than differentiate between types of trouble; for instance use of the shoulder girdle in manual labor or the effort of rolling over in bed commonly intensifies the chest discomfort associated with spondylitis in the thoracic region. Flexion of the spine will cause exacerbation of pain in practically any back disorder which involves the lumbar portion. The sciatic pain associated with protruding intervertebral disk is made worse by standing and walking because

of the additional stretch involved in extending the leg. Sitting will also increase the discomfort in this condition because of the pressure on the sensitive nerve trunk.

Probably the most significant differential point in this connection is the *effect of unguarded movements* such as coughing and sneezing. Where these acts produce sudden intensification of back and leg pain, the evidence is overwhelmingly in favor of a ruptured intervertebral disk. The mechanism of this pathognomonic symptom has been quite beautifully worked out recently by Eaton¹, although long regarded by such men as Spurling and Grantham², Dandy³, Love and Walsh⁴ as of the utmost value in arriving at such a diagnosis. Eaton¹ has shown that such acts as coughing, sneezing, heavy lifting and straining, as in defecation, result in immediate engorgement of veins in the epidural space displacing the dura toward the spinal cord and exerting traction on the firmly fixed nerve roots. Such traction on normal nerve roots is insufficient to produce pain but will do so if the root is diseased or injured. This same investigator has advanced a very plausible explanation for the commonly observed phenomenon of intensification of root pain *during sleep*, a symptom which he attributes to slight lengthening of the vertebral column as the body weight is removed and the intervertebral disks expand. Such lengthening, although slight, probably exerts considerable pull on the firmly fixed nerve roots. For this reason many patients with nerve root injury prefer to sit up all night.

The *location of the pain* may be quite misleading, especially when the cervical and lower lumbar portions of the spine are involved. A point commonly overlooked is that pain manifests itself in the cutaneous areas supplied by the affected nerve root. These areas are often at considerable distance from the site of the nerve irritation and, which is still more confusing, frequently are identical in location with those areas commonly associated with disease of the abdominal or thoracic viscera. To cite a few instances: pain projected by irritation of the upper two or three cervical nerves produces a vicious occipital headache closely simulating that of severe hypertension; involvement of

the lower cervical roots produces pain over the shoulder and down the arm to the hand similar to that of subdeltoid bursitis or arthritis of the shoulder joint; upper dorsal nerve root injury is very apt to project pain anteriorly to the precordium where it must be differentiated from that of angina pectoris; the lower dorsal roots have their cutaneous distribution over the upper abdomen, where, irritated at their vertebral attachments, they can reproduce quite beautifully the pain of cholecystitis or peritoneal adhesions. The list would be incomplete if mention were not made of the most classical example of all—the well known syndrome of sciatic neuritis resulting from involvement of the lower lumbar nerve roots, very often as the result of a ruptured and herniated intervertebral disk.

Frequently but by no means invariably, referred pain as in the instances just cited occurs in association with some unmistakable evidence such as "stiff neck" or "lumbago" which directs the attention of both patient and physician to the vertebral column. At other times it is well to hold in mind that the cause for obscure pain inadequately explained by clear-cut visceral disease may lie in derangements of the vertebral column.

The *elicitation of pain by physical examination* provides a number of important clues to the underlying trouble. Without attempting to catalogue the whole list of special tests performed by orthopedists, let me mention a few simple ones which have helped me in deciding whether to continue treating the patient myself or refer him to someone who knew something about backs. *Knuckle percussion over the spinous processes* will usually localize the trouble quite readily but the painful levels should be marked and rechecked by subsequent going over. A consistent sharply localized painful area is quite significant. The point of insertion of the cervical muscles into the base of the skull is a spot where exquisite tenderness can be found in cases of upper cervical arthritis while the whole body of the trapezius muscle is painful in many cases of lower cervical arthritis. A complaint of severe pain over the shoulder and down the arm, worse at night, associated with free abduction at the shoulder

is practically pathognomonic of lower cervical arthritis. Thorough *palpation of the thoracic wall* often reveals areas of superficial tenderness which the patient has confused with the manifestations of heart disease. Unfortunately *palpation of the abdominal wall* has been performed so long by surgeons with a downward thrust looking for inflammatory disease among abdominal organs that for the most part we have lost sight of the fact that the abdominal wall is a respectable structure in its own right and not merely a barrier to exact diagnosis of abdominal disease. Lifting up on the abdominal wall and pulling it way from underlying organs will reveal repeatedly that the tenderness lies in and not beneath this structure. If that is the case, one should suspect that the sensory nerve root at the appropriate level is being irritated. *Examination of the sciatic nerve* is an important procedure because it gives definite information concerning the integrity of the lower lumbar and upper sacral nerve roots. This is usually done in two ways—by direct palpation over the course of the nerve down the back of the thigh and calf, and by stretching the nerve with the straight leg raising test, the Kernig procedure or dorsiflexing the foot. When these manipulations elicit pain, and when similar pain is induced by sneezing and coughing, the diagnosis of protruded intervertebral disk must be considered. Sometimes it is difficult to tell whether a given pain down the sciatic nerve is due to sacro-iliac arthritis or to an intraspinal lesion such as a protruded disk. In such cases it is helpful to bend the neck forward so that the chin comes to rest nearly on the sternum while the lower part of the back is immobilized by support in a chair. If this intensifies the pain, one should suspect that the origin of the pain is intraspinal.

Quite naturally these observations will require X-ray confirmation but the time spent in rather detailed history taking is well invested for several reasons. In the first place it is quite apt to render unnecessary a number of expensive diagnostic procedures such as gastrointestinal X-rays, cholecystography, etc.; in the second place it enables one to localize quite accurately the level of the vertebral column

which should be X-rayed, a point which most roentgenologists appreciate because of the varying techniques employed in visualizing the different portions of the spine; and finally there is at least one very common derangement of the back, the protruded intervertebral disk, where X-ray examination is of questionable value³ and almost complete dependence must be placed on an accurate history and a few simple procedures to elicit the characteristic pain. This is not an argument for diagnostic short-cuts. For the great majority of patients, mine especially, expense is a major item of consideration in outlining any diagnostic procedures. There is still something to be said for that type of investigation where various diagnostic procedures are skillfully selected for performance as distinguished from that type of diagnostic mill where vast quantities of information, much of it unessential and unnecessary, is amassed, and only then sifted.

Summary

1. The various common derangements of the vertebral column are responsible for painful sensations simulating many more serious systemic diseases.

2. A careful consideration of these pains from the standpoint of (a) mode of onset, (b) conditions aggravating and relieving them, (c) localization of painful areas, and (d) their elicitation by physical examination provides evidence of a fairly conclusive nature regarding the nature of the underlying pathological process in the spine.

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Discussion

DR. J. W. WHITE, GREENVILLE:

Mr. President, members and guests, I appreciate

this opportunity to discuss Dr. Mead's well prepared paper on a difficult topic and shall try to say a few words that will tend to supplement it and avoid possible confusion in a most complex sort of subject. I am in essential agreement with Dr. Mead and commend him on the common sense way he has covered the ground. There are a few points that I would like to add and a few points to emphasize. It is a development of Dr. Chamberlains paper last year on cervical arthritis, and I feel that it is well for us to discuss these important matters that are so common in our practice and often so confusing.

First of all I would like to suggest that a more intimate knowledge of the anatomy of the spine particularly the lumbosacral region, where most of the trouble exists, be acquired by actual study of a dry articulated spine. I just could not get along without one in my office and very excellent half sized ones are inexpensively produced made of some durable plastic material. It helps to make a difficult uninteresting subject more appealing, and in that way is of great help both to ourselves and in explaining the situation to our patients.

To get down to the fundamentals, it behooves us for our patients sake to know what good and bad posture is and to realize that in our artificial, relatively physically inactive type of modern existence, poor posture at least in the type of patient we see in our office is the rule rather than the exception and that poor posture unquestionably predisposes us toward these severer forms of backache. So many of us consider poor posture in terms of round shoulders rather than the excessive lumbar lordosis that I feel we are justified in calling attention to the constant strain on our vulnerable lumbosacral region by the extreme hyperextension caused by the lordosis.

When one appreciates that at least half of our body weight is supported by the lumbosacral disc barely two inches in diameter, even normally somewhat obliquely placed, its vulnerability is seen. It is a wonder to me that we do not have more trouble in this region. When our low back is hyperextended as it is in most non-arthritis low back sufferers, another considerable reason for trouble is seen when one examines the articulated spine. The articular facets are most important in stabilizing and limiting spinal movements, and it is seen that in hyperextension their overlap is increased so that they might "hit bottom" so to speak, particularly if there is a thinning of the intervertebral disc. Even without actual pathology, there must be considerable natural variation peculiar in this structure as evidenced by the fact that we are always a fraction of an inch shorter at night than in the morning. When these articular facets do "hit bottom," I feel that pain must be experienced associated frequently with sufficient swelling to cause pressure on the nearby

nerve roots which Dandy feels is so pathognomonic of disc lesions.

I feel that we are still in the experimental stage in disc lesions and that the last word on the subject is far from being said. Much is to be learned about the behavior of the disc itself and its variation in health and disease. I admit that surgical interference seems justified not infrequently at the present time, but I am not willing to admit that an individual with a true disc lesion cannot get well without operation. Think of the multitude of people with back pain many of whom must have had prolapses who have recovered. Nature has a way of eliminating misplaced bone fragments in fracture cases. I am sure she is capable of taking care of the much softer material extruded from the nucleus pulposus. It is also well to remember that even after removal of extruded disc material, there is no assurance that under continued body weight on an already damaged structure more of the same material will not be forced out. Laminae, between which the disc trouble is, should always be fused as a part of the same exploratory operation as this will eliminate the affect of further weight on the damaged disc, and permit of the natural accommodation of emerging nerve roots to the altered foramen which nature has made generously large.

Just a word about the ligamentum flavum which, when at operation a disc lesion cannot be identified, is often found to be hypertrophied and pressing on nerve roots. In my estimation here is an instance where conservative treatment directed toward posture would have been well worth trying, as the very elongation of this ligament which occurs when the lordosis is corrected makes it thinner and less likely to produce pressure.

I admit that the fact that in my office practice, I see as many functional backs as organic ones, unquestionably contributes toward my conservative attitude toward the entire question. I guess people with pain in the back come earlier to an orthopedist than an internist before it "gets them down" too far. By instruction in posture, rest and a simple brace such as a "Camp" support, I find in the functional cases real relief can be expected. My secretary tells me that one out of every four new cases coming to my office comes primarily because of backache, and my impression is that only one-half of these have organic evidence of pathology either by physical examination or X-ray.

Dr. Mead's discussion of referred back pain in arthritics simulating various diseases is most important and should forever be borne in mind—a point which Dr. Chamberlain brought out so well last year in his paper. We must remember that we can have absolutely negative X-rays in patients totally disabled with spinal arthritis and conversely, tremendous hypertrophic changes in a spine do not necessarily carry with them a hopeless prognosis. Think of the hypertrophic arthritic changes seen

sometimes incidentally in patients suffering from an entirely different disorder. As an insurance carrier, however, I admit I would not recommend taking on such a patient as an employee.

I hope that this rambling discussion may give some of you a little encouragement in a complicated frequently discouraging problem. My natural optimism may be distorting my opinion unjustifiably, but since becoming, through the years of office practice, well acquainted with backs, I am glad to keep on seeing and treating them.

Incidentally, it is interesting to note that the word

sacro-iliac in relation to back pain seems to have survived only in some of the corset catalogues. Some of us will remember the furor about sacro-iliac disease and strain twenty-five or thirty years ago.

Whether organic or inorganic, my final plea prosaic as it is, is that real consideration be given to posture in every back problem and to call attention to its fundamental importance in the production of back pathology. It plays frequently, a significant role in the incidence of arthritis in the spine before it involves other less misused joints in the body.

Dr. Mead has given us a great deal to think about.

The Question Box

Presented by Dr. N. B. Heyward
Annual Session, S. C. Med. Assoc.
Columbia, May 20, 1942

Dr. Heyward: Someone on the committee, it wasn't I, decided that they had heard of or had seen this Question Box. I don't know why they elected me but they said I would have to put it on. We thought that perhaps some of you back home have got some problem that is worrying you and you never did quite figure it out and you wanted to ask somebody and talk to them about it. Here is your chance. Perhaps it would be better if you would write out your questions. As a matter of fact several have been handed to me already and if you have one in mind or as things go along you think of one, you write it to me or I will give the "Mike" and you can ask your own question. You can write it out and I will ask the question.

Now, as your answer to these questions, —we have gone over the profession and we have picked out some fellows we think are pretty good. We think they can answer anything you want to know. We are putting them up for that. You can ask the questions, I am sure they will do the best they can to answer them. We will line them up. Will the gentlemen come up as we call them. On this Question Box we have asked to fill in for the surgical questions Dr. F. E. Kredel, Charleston. For any medical question our own Dr. O. B. Mayer, he is at the Fort, he has been divorced from us but we still claim him. For any genito-urinary questions we have asked Dr. O. T. Finklea of Florence, S. C., he is the one to shoot the genito-urinary questions at. In pathology, who else but Dr. Lynch, from Charleston. In the field of clinical pathology and hematology, Dr. J. M. Fedder from

Anderson, S. C. Sit up there, Dr. Fedder, so they can look at you. On obstetrics, Dr. J. D. Guess from Greenville. Eye, ear, nose and throat, I had asked Dr. Walter Bristow to fill in there. Come up and fill in for us, Dr. Bristow, and answer any eye, ear, nose and throat questions, please. Pediatrics, we asked Dr. C. W. Bailey, Spartanburg and since he isn't here we are going to work some of our authorities and make Julian Price get up and answer anything. There you are, eight of them. (Applause.)

Dr. Heyward: This first one seems to fall under Dr. Lynch's direction. (1) With a Grade II Squamous Epithelioma of lower leg and no groin metastases, what should be done—X-ray or amputation?

Dr. Lynch: A—Depending entirely upon the lesion, the extent of the lesion. You might excise, otherwise X-ray, last I would say amputate, in order, depending on the extent of the lesion. You have not demonstrated the central extension of the metastases. By "excise" I mean complete excision.

Dr. Heyward: No. 2 falls to Dr. Guess.

Q—Doctor, in a Cesarean section would it not be a better procedure to deliver the head with forceps, rather than deliver by breech to prevent the infant from inhaling fluids?

Dr. Guess: A—Gentlemen, the answer to that question would depend rather considerably upon whether the baby was presenting as a breech or as a head presentation and whether you were doing the classical incision of the cervix or whether you were doing the trans-cervical delivery, the trans-cervical operation.

In the delivery by the classical operation, the incision is made through the uterus and if in such an operation the baby is presented by the head it would be best to deliver the head by the forceps, rather than doing an internal version. If, on the other hand the low trachelotomy was done, with the head presentation, it doesn't make any great difference if the head is delivered with forceps or with the hand or with a trowel-like instrument that can be gotten. The head is delivered first in any of those instances. Now, on the other hand if the baby presents by breech and you do a classical operation with the incision through the uterus, the head would naturally be the first part delivered and you deliver that with forceps or deliver it with the hand by pressure on the sides of the uterus or by lifting the head out with the hand. You must take into consideration the part of the baby that is presenting in the particular incision of the uterus that you have made, and that would be the determining factor. Now, whether the baby will inhale the amniotic fluid is not of great moment because the delivery of the baby from the uterus, after the uterus is opened, is a momentary procedure. It takes only a moment if the incision is adequate and if you know how the baby does lie and you plan your removal adequately; so those are facts that must be taken into consideration and that question can not be categorically answered either "yea" or "nay."

Dr. Heyward: The next question falls to Dr. Kredel.

Q—What are the essentials of success in doing full thickness skin grafts?

Dr. Kredel:

A—I presume this question means free skin grafts and not pedicle flaps. The easiest one to make is the small pinch or thin grafts in sheets. Split grafts come next in line, they are fairly safe. The full thickness grafts are the most difficult, to secure a successful take. On the other hand, they give the best cosmetic results of the skin over the grafted area.

There are several conditions that must be fulfilled to successfully transplant a full thickness of skin. In the first place the bed of the graft must be in shape to take it. The bed of the graft should be a healthy granulated sur-

face. Infected granulations make a poor source of any blood supply to the grafted skin. It is necessary, therefore, if there is any infection in the granulated surface to reduce the infection before the operation. This may be accomplished in a number of ways and there should, of course, be free drainage. Chemical antiseptics are of some but rather limited value. Frequent changes of moist dressings seem to give the best results and over a period of days will succeed in cleaning up dirty tissue upon which the graft is to be placed. If strong chemicals are avoided the graft is more likely to be healthy. Simply moist saline dressings are perhaps the best to achieve desired results, although where severe infection is present the sulfonamide and various other compounds have their value. In other cases, before applying full thickness skin graft, moist saline dressings should be applied for several days. One, I think, judges more by the appearances of the graft on inspection than by any complicated laboratory studies, such as bacterial counts on the surface. Good healthy red granulations, which bleed readily, are the signs of a healthy base. So much for the preparation of the surface.

The second point is that only the skin should be used in the full thickness graft. In other words, all subcutaneous fat should be carefully cleaned off before the graft is applied. This full thickness graft is placed on the surface. Thus the point is to clean off all subcutaneous fat.

The third point is provision for drainage. There is bound to be some exudate. If the graft is of large size, particularly, piecrusting incisions or small perforations should be made in the graft to allow for seepage.

The fourth point, adequate fixation is accomplished in several ways in full thickness grafts. It is usually advantageous to use sutures around the periphery fastening it to the surrounding skin so that the graft can not move until it has a chance to get a take. The second method of fixation is by proper dressing. I may interpose here that the dressing that is applied is the most important part of any skin graft operation. The type of dressing should be of a kind that will not allow any

motion on the grafts for a period of as long as a week after it is applied. The dressing applied immediately on the surface of the graft should be thin and soft, only one or two layers of gauze, moistened in salines, and over that is applied adhesive tape well over the normal skin and holding the first layer of dressing firmly in place. If possible this dressing should not be disturbed for a period of a week. Another point in helping a successful take is a pressure dressing. Exudation is minimized and the chances of adhering are better if a mild degree of pressure is applied over the skin graft. This can most readily be accomplished by using a sponge. Sterile sea sponges can be used, they tend to get stiff but they are all right and should be sterilized by chemical means. More handy is the ordinary rubber sponge one buys. It can be split in half and makes an excellent pressure dressing over a skin graft, held in place by adhesive.

The last point is, don't change the dressing, put a good dressing on and leave it on seven to ten days and you will have a better chance of not losing your graft.

Dr. Heyward: I have a question for a pediatrician.

Q—Why do not more mothers nurse their babies? What part does tobacco and alcohol play in breast feeding?

Dr. Price:

A—Frankly I don't know why more mothers do not nurse their babies. I doubt if over 10 percent of the mothers nowadays, who belong to the same social set you and I do, nurse their babies. Those on the farm and the colored women do. It may be the type of life women are living today. It is not true that they simply do not want to nurse their babies, a great many do. As to alcohols and tobacco, I think it has been pretty well proven that tobacco in moderation, that is, five to ten cigarettes a day, does not have any effect, but a person who smokes one pack or more a day would probably have a diminution in the supply. As to alcohol, unless a person drinks quite a bit I don't think it has been proven that alcohol, per se, in the case of a lactating mother has any effect on the supply of the milk. Those

are facts worked out by studies and not just ideas somebody has hatched up.

Dr. Heyward: They tell me Dr. Fedder from Anderson can give us the answer to this next question, headed "Home Defense."

Q—In case of a catastrophe where may blood serum be obtained for victims?

Dr. Fedder:

A—I presume that the questioner refers to blood plasma instead of serum. As you know, reduced to its simplest terms, plasma is that portion of the blood which can be separated from the cells if the substance has been drawn into a suitable anticoagulant. This separation can be accomplished either by centrifugilization or sedimentation. The former requires ten days but the latter can be accomplished in a matter of hours. We use sedimentation both from the time saving element and the fact that we do not have available a suitable centrifuge which by the way costs about seven hundred dollars. I refer to time saving as once the blood is collected it is placed in the ice box and requires no further attention until time arrives for removing the supernatant plasma.

We use the Abbott equipment in our work and find that we can place a pint of finished plasma in storage at a cost of \$1.75 which is far below that of other methods and in addition, the glass ware, bottles, etc., can be used over and over again.

The fact must not be lost sight of that whatever the method of preparation, the finished product is a biological intended for intravenous injection. This implies all gradation of diseaster to the victim unless the maximum of vigilance is exercised in its preparation. When one attempts to process plasma it presupposes at least elemental knowledge of the preparation of biologicals and what is more important, sufficient bacteriological training to properly carry out the various sterility and safety tests required by good laboratory practice—and the regulations of the Division of Biologics Control of the United States Public Health Service.

Our procedure calls for collecting the blood into an equal volume of Muether's Solution (buffered Saline, Citrate, Dextrose mixture) allowing the cells to sediment at a refrigerator temperature of from 5 to 9 C. for ten days

and then under rigidly enforced bacteriological sterility, (this differs from ordinary "surgical sterility") the plasma is siphoned into "pooling jugs." We formerly withdrew each flask of plasma individually and dispensed according to type but the ruling of the Division of Biologics control frowns upon this and requires pooling.

The pooling jugs are returned to the refrigerator for two days and the product is then placed in storage flasks. At this time comprehensive sterility tests are carried out. Fortunately, with several recommended preservatives and without any, our contamination rate has been nil.

The time assigned does not permit a comprehensive review of our technique but any one interested will find a warm welcome in our laboratories in Anderson and in the event that some small hospital in the state desires to enter into the work, we could possibly assign a girl trained in the method to spend a couple of days with them.

We believe that our method of procedure has the economic and time saving element to recommend it. As stated before, the finished product costs less than \$1.75 a pint, and the glass ware and basic equipment which has been figured into this remains for future use.

We have been asked about the amount to prepare for use in these troubled times. As you know, all of us who have hospitals under two hundred bed capacity are not eligible for governmental aid. However, the ratio of one pint of plasma to each hospital bed as recommended by the Council for Civilian Defense has been adhered to.

It is believed that the simple and economical technique used by us will find ready acceptance by most reasonably well trained laboratory workers. It cannot be overemphasized that, contrary to an impression that has somehow gotten abroad, there is no "simple" or for that matter any other type of plasma processing that can be safely entrusted to the hands of the ill trained or careless.

Using the Anderson County Hospital method, it will be found that a good technician can do all of the work required to keep the plasma pool in suitable condition by devoting

about two extra hours a week to this activity. Very small hospitals should have access to a central station to which they could send their blood and have it processed into plasma and returned. I do not know whether this would be the job of the Board of Health or some civilian agency, but there is certainly a need for this throughout the nation.

I repeat that the subject of plasma collection and transfusion cannot be adequately approached in this brief period, but I will be glad to attempt to answer any questions that might be asked from the floor.

(There were no questions.)

Dr. Heyward: I have a question sent up here.

Q—Is a solution of sulfathiazole of any value in treating nasal infections? *Dr. Bristow:*

Dr. Bristow:

A—Those of you who read the daily papers know that this solution of sulfathiazole has been given a great deal of publicity in the health columns. Those of you who heard Dr. Barker's presentation this morning will notice that on one of his cards he had indicated that the sulfonamides were of little good in the treatment of chronic nasal sinusitis. The use of a solution of sulfathiazole being put in contact with mucus nasal membranes may have some slight bacteriolytic properties but not to be compared with the bacteriolysis you would obtain from oral administration of the drug and getting the drug in contact with the bacteria by way of the tissue fluids. The solution that is used locally in case the patient insists on having it is 5% solution of sodium sulfathiazole.

Dr. Heyward:

Q—Treatment of 13 year old girl with persistent menorrhagia who has thrombocytopenic purpura.

Dr. Guess:

A—First we should try to find out the cause of the purpura. We should rule out infection and rule out factors that might interfere with absorption of calcium and vitamins, and sometimes this is very difficult to find out, and the menorrhagia would probably have no direct effect upon it. The laboratory studies would help you and I won't go into that for when you get into these laboratory features

we become very technical. At this time all I can say is, competent hands should have this case to find the cause of it.

Dr. Heyward:

Q—Have all other urinary antiseptics gone out of style since the sulfonamides came in or are some of them still of value?

Dr. Finklea:

A—Apparently they have. There are a lot of them. With the appearance of the sulfonamides in the field of surgery it has greatly facilitated our treatment of the urinary tract. I can say, however, that all of the urinary antiseptics have not been discarded in favor of the sulfonamides. There is today a great tendency with all of us when the patient comes in with infection, to write a prescription for one of the sulfonamides for a certain length of time and to invite the patient back to the office to see what has happened. Quite often this proves satisfactory. But the other urinary antiseptics have not been discarded altogether. We have mandelic acid, which is used largely in certain types of infection where we want to lower the PH of the urine and keep it down, most notably in the colon bacillus group where we know these bacteria do not multiply very rapidly, when the acidity of the urine is kept low. Urotropin is used a great deal. Next to these we have the drugs brought out a few years ago, the so-called analin dye preparations, which give good results in certain types of infection, but this is a very small group.

Dr. Heyward: The next question here says:

Q—Please discuss "once a Cesarean always a Cesarean" and possibility of safe delivery after one Cesarean?

Dr. Guess:

A—"Please discuss it," that would take perhaps longer than the time we have given to this to fully and completely discuss it, but I think I can abbreviate it within the limits of our time. The old doctrine came into being many years ago, once a Cesarean always a Cesarean. At that time two factors were present that are not always present at this time. The first was the almost universal operation was the so-called classical or the transfundal operation; the second factor was that

Cesareans were done or were supposed to be done under very definite occasions. They were not done for the convenience of the patient or the convenience of the doctor. Since that time I believe the reasons for Cesarean sections have been broadened out to infinity. And the laparoto-trachelotomy operation has come into vogue and is used more and more widely by the general surgeon. It goes without saying that if the first Cesarean operation was done because of a disproportion between the head of the baby and the woman's pelvic canal and the head of the baby was presented normally, from that time on if that woman was to have a baby she would have to be delivered by Cesarean because it would be just as hard for her to deliver through that same pelvis the second time as it was the first time. The same thing applies if the distortia is caused by some other permanent condition. But, on the other hand, suppose the Cesarean is done because of some emergency, suppose it is done in pre-eclampsia or eclampsia to bring about a rapid delivery; or suppose it is done to pull out the cord, then those conditions may not and will not probably obtain in the second pregnancy. I think it can be stated, fairly definite, this way—if a woman has had a low Cesarean section for a condition as obtained only in that particular pregnancy and if her convalescence was a febrile, then it is safe, reasonably safe to allow her to deliver from below in a second pregnancy. I practice and use that as a basis in my practice. If on the other hand she had a classical Cesarean section the risk is very much greater although it can be tried. The risk is very much greater and she is likely to have a rupture of the scar if she has had either the classical Cesarean section or the laparototrachelotomy; and if she had a febrile puerperium there is a chance, unless the cause of the fever is definitely known to be affecting some other location, there is a definite chance that the infection was in the womb and that it involved the incision through the uterus and that the scar is dead and a chance of rupture is likely. You will have to take all of those things into consideration and don't think the man is a fool or a dare devil if he tries to have his patient deliver from below if he is careful

and has studied his case. He may be wiser than the man who is criticising him.

Q—(From the floor) How many Cesareans would you advise a woman to have who couldn't deliver any other way except by Cesarean section?

A—I will answer that question in this wise. A good many years ago I assisted a prominent obstetrician in the city of Philadelphia to do the 7th Cesarean section on that particular patient. She was an Irish Catholic, it was against her religion to use contraceptives and she could not deliver except from above. I asked whether he was going to sterilize her and he said, "I can't, it is against the law of the church." I asked how many more would she have and he said she is 37 and the law of averages will probably give her five or six more.

Dr. Heyward:

Q—What are the usual defensive forces of a syphilitic pregnant woman that tends to prevent the fetus from becoming infected until the 3rd to the 5th month of pregnancy?

A—By Dr. Lynch: I don't know. I wouldn't at all like to indulge in an extemporaneous discussion of something I can't honestly say I know anything about.

Dr. Heyward:

Q—In giving Diptheria Pertussis Vaccine do you advise giving an additional dose of plain Pertussis Vaccine?

Dr. Price:

A—Some are advising at the present time that they give Diptheria and Pertussis Vaccine together. A great many have not adopted this procedure. Personally I think it better to give them separately. I give two doses of Diptheria Toxoid, preferably with an interval of one or two months after I have already given the Pertussis vaccine. I believe the mixture of Diptheria toxoid with Tetanus toxoid is preferable to the mixture of the Diptheria toxoid with Pertussis vaccine.

Dr. Heyward:

Q—What is the difference in an "R" unit, a millegram hour or a mille-cure' in the measurement of Radiant energy?

Dr. Pitts:

A—Since nobody seems to know anything about it I will take a shot at it. These are all measurements of radiant energy, radio activity. The "R" unit is the international unit of measurement of X-rays or Roentgen rays. The millegram hour is the unit of measurement of radium salt activity. And the mille-cure' is the measurement of radium emanation.

Dr. Heyward:

Q—The local treatment of furunculosis of ear canal. Value of Sulfonamides.

Dr. Bristow:

A—If the condition is a true furunculosis the etiology in the large percentage of cases is due to a skin infection with staphylococcus organism. The local treatment consists largely in cleansing the canal of the ear with the application of a bland ointment containing sulfathiazole. The rest of the treatment consists in the internal administration of one of the sulfonamides, preferably sulfadiazine. If the furunculosis has been of long duration the chances are that you have a mixed infection and very frequently you have a mycotic infection superimposed on the simple furunculosis and in that case the treatment should be determined by a microscopic examination of the secretions from the ear.

Dr. Heyward: This next question is genito-urinary.

Q—What urinary antiseptic do you use in infections with *Bacillus Proteus*?

Dr. Finklea:

A—That question is fairly easy to answer. We use them all and expect very little results from any.

Dr. Heyward: I have a question here.

Q—If a pregnant patient has some infection, is it safe to give her the sulfa drugs in the usual accepted doses?

Dr. Guess:

A—I have never heard the safety of the administration of these drugs to pregnant women questioned by anyone who has had any experimental or broad experience in their use. I have been asked that question many times by many men who haven't had these opportunities. Personally I have used them and I haven't seen any ill effects on the patient. Therefore,

I say it is safe and I advise you to use them.

Dr. Heyward:

Q—What effect does the administration of thyroid extract have on milk production during the puerperium?

Dr. Guess:

A—I can answer that almost as quickly as Dr. Lynch answered a question he was asked a while ago. Perhaps this is a modification. Does the person have in mind the woman who has a condition of hypothyroidism and is he administering it as a part of her general care? By bringing her general metabolism to par this would make her more likely to produce milk in a way a normal woman would,—but, if he has in mind the giving of it as a milk producer,—I don't know, I think probably it would have no effect whatsoever.

Dr. Heyward:

Q—Is it safe to give the nursing mother full doses of the sulfonamide drugs?

Dr. Guess:

A—The sulfonamides are excreted to some extent in the milk. On the other hand the baby, in my opinion, will not get enough sulfonamides to have any deleterious effects on the baby unless the baby has an idiosyncrasy for the drugs. Therefore, if the mother is suffering from a condition which indicates the administration of these drugs I would certainly administer the drugs and I would not take the baby off the breast, if she should have milk for her baby.

Dr. Heyward:

Q—What is a curative treatment for chronic eczema of external auditory canal?

Dr. Bristow:

A—I don't know of any curative treatment. The treatment would resolve itself into a determination of the etiology. A chronic eczema of the auditory canal is a symptom complex which may be due to a number of causes. It may be an infection of mycosis organism of the skin; it may be auto mycoses, or it may be a neurotic manifestation. The treatment would depend entirely on the etiology.

Dr. Heyward:

Q—Discuss sulfonamides as the causative factor in urinary calculi?

Dr. Finklea:

A—The exact cause of the urinary calculi formation during the administration of urinary sulfonamide has not been definitely determined. Some of the patients will develop urinary calculi with relative small doses while other patients can take enormous quantities and have no bad effects whatsoever, so far as formation of stone is concerned. We have been advised to give these patients, during the time they are taking a sulfonamide some alkalies, either baking soda or some other similar preparation. This is supposed to act in the way that it prevents the precipitation of the sulfonamide salt in the urinary tract. Just what part it plays I personally do not know. It might be upon the principle that a urine with high acidity will cause more precipitation than a urine with low acidity. The calculi might be found during the administration of sulfathiazole, sulfapyridine, and sulfadiazine. So far, I have not seen any report of the calculi following the use of sulfanilamide, itself. The treatment of these calculi is, during the administration of the sulfonamides it is wise to examine the urine frequently to see if there are any crystals in the urine because the precipitation is first shown through the crystals. If this is done then you are reasonably sure to catch the formation of the calculi before they get large enough to cause any damage. Patients with fever are able to take much larger doses of sulfonamide drugs but one should be very careful to reduce the dosage when the temperature begins to fall, otherwise stones are more likely to form. The treatment for these calculi, once they have formed, is to irrigate the urethra, bladder and kidneys, wherever the calculi are located, with normal salt solution, about 106 degrees Fahrenheit. These calculi are fairly easy to dissolve if tackled early and not allowed to become a mixed stone.

Dr. Heyward:

Q—What is the present treatment of dysmenorrhea in case of no demonstrable abnormality, and particularly the value of testosterone in this treatment?

Dr. Guess:

A—I was afraid somebody would ask a question about dysmenorrhea, and not only

did he ask it but he gave it in such a way that it would take probably 30 minutes to discuss it.

Testosterone in its action on the female uterus probably asserts its action on the anterior pituitary gland and through that action on the normal activity of the ovary itself so that given sufficient testosterone and worked through the cycle, first on the pituitary gland and then on the ovary, it tends to reduce ovarian activity. Now, this is a fact that is known to all of you, that the women who have meno-metrorrhagia without ovulation do not have painful bleeding, whereas if they have a normal period they may have painful bleeding. Testosterone tends to inhibit the formation of corpus luteum and tends to give the type of bleeding which is similar to the type of bleeding which occurs in menometrorrhagia. It has been further found that frequently testosterone administered regularly during the menstrual cycle will cause one period of painless bleeding and a second period of painful bleeding, alternating because of the fact that testosterone's action is not continuous. Ovulation will be inhibited in alternating cycles. Coming back to the first part of the question, what is the treatment of essential dysmenorrhea, it is tied to so many different factors, many of which are psychogenic, it takes all the tact and experience and therapeutic experimentation to work out a satisfactory treatment. Frequently, giving a placebo will relieve a dysmenorrhea.

Sometimes going to a houseparty at the beach will give them relief when nothing you can give them at home will do it.

Dr. Heyward: I have one final question for the whole board up there together, see if anyone can answer. Before we give this question, we are under great obligation to these gentlemen for having come up here and Dr. Price wants to know what you think of it. It is something new. We are trying it, if you like it we will have it next year. Write and tell us if you like it or not. If you think it is rotten, say so. We would like to have an expression from any of you, one way or the other.

This question is for the whole board:

Q—Why do Negroes not become morphine addicts?

A—Is that statement a fact? Where they are so economically situated that they can obtain it? I am answering a question with a question. Is that a fact where they are so situated, economically, where they can secure it, is that a fact?

Dr. Heyward:

Q—Is there anyone who has colored patients who are addicts?

A—(two)

Q—Is there anyone on the Board who cares to answer that? If not, gentlemen, we have enjoyed having you and the party is over.

(Meeting was adjourned until the banquet at 8:00 P. M.)

Names of 46 applicants for licenses to practice medicine and surgery in South Carolina who passed the June examinations were announced by the board of medical examiners. They are:

R. F. Allison, Columbia; Abram Berry, Columbia; W. S. Bradley, Jr., Greenville; G. W. Brunson, Jr., Orangeburg; F. M. Burdette, Jr., Simpsonville; Hubert Claytor, Second, Hopkins; T. R. Cobb, Jr., Augusta, Ga.; G. O. Creed, Camden; J. H. Erwin, Mobile, Ala.; E. D. Guyton, Marion; T. G. Herbert, Jr., Charleston.

R. C. Horger, Eutawville; W. K. Kerr, Abbeville; J. H. Kirby, Jr., Mullins; G. R. Laub, Columbia; J. W. League, Charleston; F. B. Lee, Scranton; R. W. Lominack, Newberry; S. G. Dowe, Jr., Black-

ville; W. C. Marett, Jr., Seneca; W. D. Martin, Mullins; F. A. McIver, Darlington.

H. W. Mead, Gaffney; J. C. Mills, New Orleans, La.; B. M. Mixan, Jr., Yemassee; G. F. Mood, Jr., Charleston; J. W. Murray, Jr., Charleston; M. L. Nelson, Jr., North; W. J. Nelson, Spartanburg; G. D. Page, Greenwood; J. R. Paul, Jr., Charleston; W. H. Powe, Jr., Greenville; N. C. Price, Orangeburg; J. A. Quinn, York; R. W. Qusenberry, Charleston.

L. D. Rhodes, Estill; A. C. Smith, Jr., Glenn Springs; W. M. Snoddy, Jr., Fairmont; G. H. Stokes, Charleston; J. T. Stokes, Charleston; W. B. Townsend, Charleston; W. R. Tuten, Jr., Fairfax; Ancrum Waring, Jr., Charleston; L. A. Wilson, Jr., Charleston; C. H. Workman, Jr., McCormick; C. S. Wright, Columbia.

THE JOURNAL

OF THE

South Carolina Medical Association

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Original manuscripts, subject to approval by the Editor and the Editorial Board, are desired for publication in the Journal. They should be typewritten, double spaced, on 8½ x 11 paper. References should be complete, and only such as relate directly to statements quoted in the paper. Illustrations will be used as funds permit, or as authors are willing to bear the necessary increase in cost. Short original articles are preferred to long reviews.

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JUSTLY PROUD

The people of South Carolina should be proud of their physicians.

They should be proud of those medical men who are now serving in the armed forces of the United States. Elsewhere in this Journal is printed a list of those men who are now in uniform and on the front cover is a map showing the number who have left from each county. So far as we can determine no state in the union has contributed a higher percentage of physicians for military duty than has South Carolina. In practically every instance these physicians have made sacrifices to join the Army or Navy but they have done so without complaint.

They should be proud of those physicians who are now practicing in the cities, towns and hamlets of this commonwealth. A large proportion of these have indicated their willingness to don the uniform but the civilian need for their work is so great that they have been asked to stay where they are. Many of these men are anxious to join their comrades in the Army or Navy but the call of duty forces them to continue the daily unexciting task of practicing medicine at home. Should events develop which necessitates their joining the armed forces they will respond to the call without delay.

Yes, the people of South Carolina have a right to be proud of their physicians and we are proud to recognize them as our colleagues and friends.

MEETINGS

Those who are privileged should recognize the responsibility which goes with privilege. This belief was paramount at a recent meeting of Council.

After careful consideration Council decided to advise a continuation of county medical meetings but suggested that all district medical meetings be discontinued for the duration of the rubber shortage. Each Councilor was asked to convey this news to his own district and the secretary was instructed to send official notice to certain groups.

This action is in line with an editorial which appeared in our last issue and we wish to bring this to the attention of our readers as an official suggestion of Council.

THE ISSUES

The South Carolina Medical Association has never engaged in politics and it is our fervent hope that this organization never will. The members of the Association, however, and the Association itself are vitally concerned in all matters pertaining to the public health and to the medical welfare of the people of this state.

With this in view the Council in joint session with the Legislative Committee instructed the secretary to send a letter to the candidates for high office asking for a statement listing their views on vital matters.

The following letter was sent to the two candidates for Governor:

"Gentlemen:

"The members of the South Carolina Medical Association are vitally concerned in all matters pertaining to the public health and to the general medical welfare of the people of the state. Consequently, they are keenly interested in the views expressed by candidates for high office.

"Since it is impossible for you to talk with each physician in the state and to answer his questions, I am glad to offer my office as a medium through which you may express yourself. I will be glad to receive a statement from you, setting forth your views concerning general medical affairs, and to send this statement to each member of our Association without editorial comment.

"Might I suggest that, in your statement, you make known your views concerning:

"1. The Medical College of the State of South Carolina. Should the present high standards of education at that institution be maintained, even if it means increased appropriations?

"2. The lowering of requirements for candidates for examination before the State Board of Medical Examiners. Should the present high requirements be maintained or should they be lowered to include graduates of non-accredited medical schools?

"3. The relationship of the Federal, state, and local government to the care of the indigent sick. Is the medical care of the poor a prime function of the Federal Government or is it the direct concern of state and local governments?"

The following letter was sent to the candidates for the office of Senator:

"Gentlemen:

"The members of the South Carolina Medical Association are vitally concerned in all matters pertaining to the public health and to the general medical welfare of the people of the state. Consequently, they are keenly interested in the views expressed by candidates for high office.

"Since it is impossible for you to talk with each physician in the state and to answer his questions, I am glad to offer my office as a medium through which you may express yourself. I will be glad to receive a statement from you, setting forth your views concerning general medical affairs, and to send this statement to each member of our Association without editorial comment.

"Might I suggest that, in your statement, you discuss your beliefs regarding the relationship concerning the Federal, state and local government to the medical care of those in the low income group.

"Is the medical welfare of the poor a prime function of the Federal government or is it the direct responsibility of state and local governments?

"Should projects for medical care of the poor be undertaken by the Federal government or should they be administered by local or state agencies with financial aid from the Federal government if necessary?

"Should hospitals be built for local communities under direct Federal supervision and control or should they be built by local or state agencies with loans or grants in aid from the Federal government?

"Should effort be made to retain, so far as is possible, the private-patient, private-physician relationship or should efforts be made to place more and more of the sick under the care of salaried physicians with salaries being paid by the government?"

Replies from the two candidates for Governor are printed in this issue of The Journal.

When the statements have been received from the other candidates they will be mimeographed and a copy sent without editorial comment to every member of the Association.

It is suggested that members of county societies, in a group or as individuals, discuss these questions, listed above, with the candidates for congress and for the legislature and to acquaint them with the stand which the medical profession of this state is taking along these lines.

The Candidates Speak

Spartanburg, S. C.

July 25, 1942.

Sumter, S. C.

July 27, 1942

Dr. Julian P. Price, Sec.,
S. C. Medical Association,
Florence, S. C.

Dear Doctor Price:

This is to acknowledge your good letter of July 23rd. Since I am exceedingly interested in the medical association and the medical men of S. C., I am pleased to answer the questions set out in this letter.

In answer to question number one, I want to say emphatically that I am in favor of keeping the standards of education at the Medical College of South Carolina on the same high plane as they now exist even if it means increased appropriation. You will find if you look in the record that while I was Governor I recommended additional appropriations for improved buildings at the Medical College. The bill was passed and was signed by me.

In answer to question number two, I will say that I think the present requirements of the State Board of Medical Examiners should be maintained.

In answer to question number three, I do not think that medical care of the poor is a prime function of the Federal Government. I do feel that the government should aid us in stamping out diseases and epidemics such as venereal diseases, infantile paralysis and such. I do not feel that the government should take over the medical care of our people any more than I think that they should take over the law practice, away from the lawyers.

I realize that having so many of our young doctors called into service has handicapped many of our communities and no doubt there are those who would be willing to let down the bars during this emergency, but I cannot believe that anyone who has the welfare of our people at heart could think that the ends would justify the means.

With all good wishes to you and your association, I am,

Yours sincerely,

Olin D. Johnston.

Hon. Julian P. Price, M.D.
Secretary,
South Carolina Medical Assn.
Florence, South Carolina

Dear Sir:

I am happy to acknowledge your letter of July 23 relative to public health in South Carolina.

I know well of the vital interest of your members in the medical welfare of our people. I know, also, of the wonderful work your profession has done. Every consideration should be given your association, therefore, in such questions as you have enumerated.

On question No. 1, I would demand that high standards at that institution be maintained; yes, no matter if higher appropriations are necessary. Furthermore, I wish to say that I think higher appropriations are necessary and should be provided.

On question No. 2, it should be strictly understood that the present high requirements before the State Board are to be maintained. No recognition should be given graduates of non-accredited schools.

On question No. 3, I prefer to place my faith in State and local government. We know our own people, we know their problems and I regard socialized medicine or anything like it a menace to our people.

I hope that my views have been clearly expressed and you may be sure that I intend to be consistent and vigorous in upholding them. Should further questions arise, I will be glad to assert myself and the attitude of your association will always be considered by me as of prime importance.

Sincerely yours,

Wyndham Manning.

South Carolina Physicians in Service

(July 24, 1942)

The following list of physicians has been compiled from official lists published earlier this year, from reports of county medical society secretaries, from newspaper clippings, and from personal communications. Every effort has been made to make the list accurate but there may be a few mistakes and readers are asked to notify the secretary of any discrepancies.

A word of explanation may be necessary with regard to some of the men whose names are listed. A man in service is officially listed as coming from South Carolina when he gives this state as his home. Thus, when Dr. John Smith of Columbia, interning in New York, enters the service he can give either New York or Columbia as his last address. If he gives New York he is listed as a physician from that state but if he gives Columbia, he is listed as coming from South Carolina. Although some of the names in the list below are of physicians who have never started to practice in South Carolina they are South Carolina physicians none-the-less and if they were not in the Army or Navy they would probably be in this state.

The numbers on the map on the front cover are as of July 24th and are subject to change without notice.

- | | | | |
|--|--|---|--|
| Abbeville County
McLane, Francis C.
Poliakoff, Abraham E.
Rosenberg, George
Ward, A. C. | Chester County
Chance, F. S.
McConnell, Harvey E. | Hampton County
Larisey, Carr T.
Lawton, Wm. H. | Chappel, Buford S.
Cuttino, John T.
Davis, J. McMahon |
| Aiken County
Brooks, T. G.
McNair, Wallace | Chesterfield County
Lucas, Thos. L. | Horry County
Green, D. W.
Johnson, Julius D.
Marshall, James M.
Rourke, Henderson | Dotterer, Thos. D.
Fouche, Jas. W.
Fox, Wm. M.
Fuller, Lawrence |
| Allendale County
Preacher, A. B. | Clarendon County
Howle, Myron G.
King, Joseph H. | Jasper County
Finkelstein, David J. | George, W. E.
Hall, Henry F.
Hutchinson, Manly E. |
| Anderson County
Browne, Samuel M.
Dendy, Wm. S.
Goodlett, O. M.
McBrearty, John D.
Moseley, Chas. H.
Rainey, John F.
Robertson, J. W.
Robinson, John F. | Colleton County
Black, H. M.
Brown, Geo. C.
Moore, Henry W.
Zalin, Jacob | Kershaw County
Brunson, Joseph W. | Josey, Allen I.
Josey, Richard B.
Kronrad, Lorenz |
| Bamberg County
Cleekley, J. Jennings
Stuckey, Charles L. | Darlington County
Coleman, Marshall J.
Timmerman, Wm. B. | Lancaster County
Carnes, W. C.
Corcoran, Edwin E.
Crawley, J. D.
Lippert, K. M. | Law, Edward H.
Lide, C. M.
Matthews, Rudolph S.
Miller, Samuel E.
Mayer, Orlando B.
Oliver, Benjamin M.
Pirkle, Jas. C.
Plotkin, Oscar M.
Pratt, John M. |
| Barnwell County
Cone, Wallis D. | Dillon County
Betha, W. S.
McMillan, Carl
Rosenfeld, Abraham P. | Laurens County
Anderson, C. W.
Blalock, Geo. R.
Dusenberry, Jas. F.
Graham, B.
Jeanes, Jas. G.
Jones, F. Dudley
McGowan, Robt. P.
Moorhead, Wm. H.
Parks, Richard H.
Wilkes, Samuel M. | Richard, Dalbert
Schayer, Isadore
Seastrunk, Jesse G.
Shaw, Jas. G.
Waddell, Henry G.
Wilson, Harry F.
Workman, J. B.
Mamin, Harry |
| Beaufort County
Gaillard, Peter C.
Jones, W. B.
Keyserling, B. H.
Rubinowitz, A. M. | Dorchester County
Miles, Louis S. | Lee County
Cousar, John B.
Keels, Lucius B. | Saluda County
No physicians in Service |
| Berkeley County
Lawther, F. R. | Edgefield County
No physicians in Service | Lexington County
Henry, Hector H.
Woods, Clarendon B. | Spartanburg County
Able, LeGrand G.
Allgood, James E.
Bolgla, Julius H.
Colquitt, Alfred O.
Crow, Fred
Crow, Robt. H.
Hammond, Gaines W.
Herbert, Wm. C.
Jamison, Andrew M.
Kallil, Charles
Painter, W. W.
Phifer, I. A.
Poole, C. H.
Poole, Harold L.
Price, Geo. W.
Scott, W. S.
Smith, D. L., Jr.
Temples, P. M.
Walker, Howard
Wallace, John B.
Watkins, J. O.
Way, Roger A.
Whitworth, Clyde W. |
| Calhoun County
No physicians in Service | Fairfield County
Buchanan, John C.
Turner, James D. | Marion County
Finger, Elliott
Hankins, T. C.
Michie, Donald E.
Smith, Robt. C.
Weston, I'On L. | Sumter County
Calder, Alexis B.
Huth, P. E.
Morse, Stanley F.
Weinstein, Howard I. |
| Charleston County
Baker, Robert J.
Ball, W. J.
Barnwell, E. H.
Bowen, Harold J.
Brockington, W. S.
Brown, Alton G.
Buist, A. J., Jr.
Burn, Edward M.
Burnet, Burgh S.
Cathcart, Hugh
Chamberlain, O. B.
Cox, Marcus E.
Evans, Ira C.
Hirschmann, Victor R.
Jenkins, P. G.
Knoblauch, Frederick
Koontz, L. A.
Lee, Robert E.
Linton, I. G.
McInnes, George F.
Moorman, V. R.
Parker, Edw. F.
Pope, Madison R.
Reeder, Oscar S.
Regan, John W.
Reynolds, Thos. W.
Rice, Earle, M.
Robertson, Henry C.
Rogers, Wilbert K.
Stack, David R., Jr.
Vunk, Raymond H.
Walker, W. H.
Watson, Walter H.
Wellhock, W. L. A.
Wilson, Isaac R. | Florence County
Adams, Edward M.
Barnwell, John B.
Betha, James A.
Charles, R. K.
Hanahan, Ralph B.
Harrison, A. F.
Holman, James M.
King, Lebby B.
Mobley, M. R.
Smith, Geo. C.
Stith, Robert B.
Sullivan, E. N.
Timmons, T. A.
Walsh, John K. | McCormick County
No physicians in Service | Union County
Owings, Francis P.
Scott, James
Stevens, A. H.
Switzer, P. K., Jr. |
| Cherokee County
Baier, George F.
Pittman, John G., Jr.
Thomas, J. P. | Georgetown County
Lacey, Wm. H.
Siau, J. R. S. | Newberry County
Driscoll, Robt. H.
Epps, Geo. L.
Houseal, Robt. W.
Welling, Arthur W. | Williamsburg County
Sanders, Keith F. |
| | Greenville County
Bell, J. W.
Brown, Robert A.
Converse, J. I.
Edwards, Wm. W.
Fair, Chas. H.
Hearn, Paul
Horger, Edgar O.
Lipscomb, Jas. E.
McLawhorn, Bernyrd C.
Parker, Thomas
Poole, Everett B.
Ramsey, Allen B.
Scarborough, Asa M.
Simmons, W. W.
Smith, Hugh
Smith, Keitt H.
Topp, Olfert W.
Warner, W. P., Jr.
Whitworth, Horace M.
Wyatt, Chas. N. | Orangeburg County
Marcus, Hyman
Thackston, L. P.
Wolfe, Albert B. | York County
Bratton, J. R.
Brown, A. G.
Gaston, Frank P.
Hart, W. Lee |
| | Greenwood County
Adams, A. E.
Bishop, Walter G.
Durst, George G.
Holloway, W. J.
Royal, H. G.
Schneider, L. A.
Williams, J. P. | Richland County
Ball, Robt. W.
Barron, Wm. T.
Bennett, T. W.
Callison, H. Grady
Chapman, Chas. G. | |

Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

CASE OF DR. ROBERT WILSON, JR. ABSTRACT NO. 454

Student Stokes (presenting):

Present Illness: This 45 year old colored man was admitted with chief complaint of "pain in stomach" of two days duration. He gave a history of occasional bouts of abdominal distress for about a year and had also experienced mild precordial pain on exertion over the same period. On 11-22-41, nine days before admission, he began a job of unloading fish scrap from a boat at a fertilizer plant. He wore no mask and the odor was very offensive. He felt very well until five days later, 11-27-41, when he began to experience general malaise, a little feverishness, anorexia, nausea and abdominal discomfort. On the same day someone remarked to him that his eyes looked yellow. Though he felt progressively worse he continued to work until two days before admission, 11-29-41, when he felt much worse, had cramping abdominal pain, vomited several times and took to his bed.

Physical Examination: T. 98.6. P. 62. R. 20. BP. 140/80. Revealed a well nourished and well developed colored man who appeared very weak and moderately ill. Skin was moist and elastic, mucous membranes pale. There was a marked icteric tint to the sclerae. Ears, nose, mouth and throat not remarkable. Submaxillary and inguinal nodes were palpable but not tender. Chest equal expansion. Lung fields clear throughout. Mediastinum was not widened. Cardiovascular system apparently normal. Abdomen was diffusely and moderately tender with some voluntary spasm. No abnormal masses felt. Old scar present on glans penis. Prostate not enlarged, but soft and boggy and very tender. Extremities not remarkable. Knee jerks were depressed, but present and equal, and all other reflexes were physiological.

Laboratory:

Urine: 12-1-41, Blackish red in appearance. Sp. Gr. 1.018. Acid in reaction. Albumin 4 plus. Sugar 0. Acetone 0. WBC 1 plus. RBC 0. Casts 1 plus (hyal. & gran.) Epithelium 2 plus.

Blood:	12-1	12-2	12-3	12-4	12-5	12-6
RBC (millions)	3.96	1.62	2.99	3.00	2.34	2.20
WBC (thousands)	19.10	41.35	32.00	23.00	9.00	6.50
Hb. (gms.)	8.5	5.0	5.5	4.0	4.5	4.5
Urea N.			99.	155.	224.	285.
Creatinin			8.4	14.0	16.8	21.8

12-7	12-8	12-9
1.75	2.59	2.50
6.75	9.90	6.02
3.5	4.0	5.5

530. 488. 470.

20.6 23.2 22.0

Icterus Index—Completely hemolyzed.

Course: Patient was given 500 cc. of blood on the 2nd, 4th, and 7th hospital day, without reaction. His abdominal pain became increasingly severe, he was nauseated and vomited several times. On 12-4-41 he developed urinary suppression. He did not void until the 7th, then only 630 cc. and 470 cc. on the 8th. The last 2-3 days he was delirious, gradually fading into increasingly deep coma, died at 1:10 A. M., on 12-10-41.

Dr. Wilson: (conducting)—Mr. Quisenberry, suppose you start the discussion for us.

Student Quisenberry: We have here a 45 year old colored man whose chief complaint is abdominal pain. He has jaundice and the blood chemistry studies indicate progressive urea nitrogen retention, with associated suppression of urination. Casts and albumin in the urine are indicative of kidney damage. These are the chief features in the case, and these together with the history, indicate that he must have had some noxious substance causing damage to the liver and kidneys.

Dr. Wilson: What is the nature of the damage that was inflicted on the liver and kidneys?

Student Quisenberry: These organs have a very abundant blood supply and any toxic substance in the blood will cause damage to their highly specialized cells. I think we have evidence of liver and kidney damage and also marked destruction of red blood cells. The latter may be due to a variety of causes, some of the common ones being the wrong type of transfusions, mushroom and phosphorus poisoning.

Dr. Wilson: You think then that there was some substance of unknown origin circulating in the blood? •

Student Quisenberry: Yes sir, I do. It was carried by the blood stream and worked on the kidneys, red blood cells and liver.

Dr. Wilson: What do you think the man died of?

Student Quisenberry: Uremia plus liver damage.

Dr. Wilson: Mr. Tuten, how do you explain what happened to this patient?

Student Tuten: First of all I do not believe he had any appreciable liver damage. I think his death is directly attributable to some toxic element in the fish-scrap which produced a tremendous hemolysis of the red blood cells. This caused hemoglobinemia and hemoglobinuria with blockage of the kidneys by hemoglobin casts and resulted in suppression of the urinary output and finally complete anuria for about three days.

Dr. Wilson: Is hemoglobin soluble?

Student T.: I do not know.

Dr. Wilson: Well, it must have been in quite insoluble state when it blocked the tubules don't you think?

Student T.: Yes, I suppose so.

Dr. Wilson: Does any other member of the staff wish to ask a question or suggest any other hypothesis?

Dr. Kelley: I would like to ask how much hemoglobin must be present in the plasma before it appears in the urine and also why this patient was jaundiced?

Student Womble: There is apparently a definite renal threshold for excretion of hemoglobin and it has been calculated that the amount of hemoglobin in the plasma must be in excess for the amount that would be contributed by destruction of about one sixtieth of the total number of red blood cells.

The patient was jaundiced because when hemolysis is increased, the formation of bilirubin is correspondingly increased and this results in staining of the tissues if the amount of bilirubin in the blood reaches a sufficiently high level.

Dr. Wilson: Mr. Waring, how do you tie up hemolysis with jaundice?

Student Waring: Bilirubin is formed from the hemoglobin that escapes from the red blood cells when they are hemolyzed. It is formed throughout the entire reticulo-endothelial system and is then carried to the liver for excretion. If there is excessive hemolysis the liver cannot handle all the bilirubin and it remains in the blood.

Dr. Wilson: This case is one of the few that we have had here and is the only fatality from this type of pathological process. Another man was sick from the same thing at about the same time, but recovered. It is a type of poisoning caused by some constituent of fish-scrap which these individuals probably inhale while unloading this material from the boats. It is a powerful hemolytic agent and produces its serious results chiefly by hemolysis of the red blood cells. Dr. Mangum has done some work on it and I'll ask him to discuss the matter further.

Dr. Mangum: Our investigations are as yet incomplete and unconvincing but we are able to obtain a powerful hemolytic agent from the plasma of these individuals who were poisoned. This substance came down in the globulin fraction of the plasma and was precipitated out with ammonium sulphate. Its exact nature we do not yet know, but it seems to be related to arsene. We want to investigate it further when possible, but conditions along the Atlantic Seaboard do not indicate that we will have many fish-scrap boats putting in here.

Dr. Cox (Demonstrating kidneys): The kidneys are moderately enlarged weighing together 480 gms. At autopsy the cut surfaces showed diffuse widening of the cortices with obliteration of the surface mark-

ings and a peculiar variegated mottling. A conspicuous feature was the dark reddish brown striated appearance of the papillae. All these changes are still present, but rather indistinct after fixation.

This case presents a fairly simple fundamental pathologic picture which can be traced from beginning to end. The extensive hemolysis produced an excessive amount of hemoglobin in the blood which was secreted through the kidney glomeruli and concentrated in the tubules with blockage and eventual fatal uremia. Microscopically the conspicuous feature in these kidneys is the presence of large numbers of hemoglobin casts blocking the tubules, particularly the collecting ones.

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ATLANTA, GA.

Annual Meeting South Carolina Medical Association Scientific Session

Wednesday, May 20, 1942.

Meeting called to order by President George Truluck, at 9:45 A. M.

Rev. Louis C. Melcher gave the invocation.

Dr. Tom Pitts welcomed the Association to Columbia; President Truluck gave the response.

The Chair: We will now have our first paper, "General Practice in China," by Dr. V. P. Patterson, Chester, S. C.

(Dr. Patterson gave a talk on conditions and diseases as found in China and then showed slides illustrating his talk.)

The Chair: Dr. Patterson's paper is open for discussion or questions. Would any of you like to ask any questions?

Dr. McGuire: (Recognized by The Chair) I noticed in his paper a large part was taken up with external cancers. I was just going to ask him whether there was much internal cancer, for instance, cancer of the stomach or cancer of the intestines. I remember sometime ago, Albert Oxner of Chicago was a firm believer of the germ theory of cancer. In the East Indies there was a predominance of external cancer because the natives didn't keep their bodies clean. They were filthy and for that reason there was a predominance of external cancer, whereas, because of their religious belief of having to cook their food (and destroy the germ) there was scarcely any internal cancer among them or of the Chinese. The Japs who were cleanly, taking baths and who kept their skins very clean, they seldom had external cancer but they did eat a lot of raw vegetables and they were therefore predisposed to internal cancer. The thought occurred whether that thought would be borne out by Dr. Patterson, whether or not there was a good deal of internal cancer among the Chinese.

The Chair: Is there any further discussion?

Dr. Patterson: In regard to internal cancer. Nobody knows the incidence of internal cancer among the Chinese. They have a habit of attending to those diseases they can see and frequently a person with carcinoma of the stomach or uterus will not come to the hospital at all and will probably die at home. The diagnosis is never made because no competent physician has seen that patient to make an examination. Most of those cases that did come into the hospital were gastric cancer and uterine cancer, and it was too late to do any surgical procedure at all. I don't believe there was a week that passed during my stay out there that I didn't see at least one uterine or cervical cancer, but I don't believe, during the years that I was there we did an operation on any of these patients that I felt was done early enough to do the patient any good. I did several operations, more or less palliative or experimental to see if it would do any good. They

came so late any operation was practically useless. The same thing is true of cancer of the stomach. It is said cancer of the esophagus is more frequently found in the Chinese than any race, also principally among the Chinese men. The explanation is the men are served first by the women and the rice the Chinese men eat is hotter than the rice the women eat, and that the heat of the hot rice causes the cancer of the esophagus. I don't know if that is true. I know we saw considerable cancer of the esophagus, all of which was in the advanced stage.

As far as internal cancer was concerned we were more fortunate. We had cancer of the cecum and of the colon that came in early enough for us to do an examination and to perform an operation that for a little while, a period of two or three years after the operation, were successful.

One more of our difficulties was following the cases. They have a theory if a doctor is good he will cure them with one visit, if he doesn't cure them in one visit he is no good, and therefore they do not return. It makes it very difficult. If you do a successful operation, where the patient is satisfied, they will come back and let you see if it is successful or not. On the other hand, if it is not successful, there is that much more reason why they should not come back.

The Chair: Now, our next paper "Disseminated Circumscribed Pulmonary Deposits," by Dr. W. A. Smith, Charleston, S. C. (Applause.)

Dr. William Atmar Smith: When your chairman asked me to appear before you he suggested the subject, "The Treatment of Pulmonary Tuberculosis." It seemed to me we had had so many papers on that subject I suggested I speak on "Disseminated Circumscribed Pulmonary Deposits." He wrote me back and said he thought it sounded very imposing. I wondered if he thought it might be imposing on the audience, he did not say so. (This paper will be printed later.)

The Chair: At this time the Columbia Medical Society has asked for a few minutes on our program and I will call on Major O. B. Mayer.

Major Mayer: In a time of war it is not unbecoming to turn aside from arduous tasks to honor one of our members whom we love—and whose life exemplifies its virtues and qualities of human kindness for which we are fighting. In honoring such a man we reaffirm our faith in our heritage.

The Columbia Medical Society has, by unanimous voice, decided to express its deep felt respect for one of its most distinguished members. By reserving a place on this program, the South Carolina Medical Association joins us upon this happy occasion. In the past the Columbia Medical Society has, on occasion, honored certain of its members

for outstanding achievements in science; others for devotion to their profession; others for vision in fostering organized medicine. Today we wish to add to that roll one who has not only all these claims to recognition but who in addition has won a unique place in the affections of the community as an outstanding family doctor, so faithful, conscientious and skilled in his service that no one can replace him. The confidence and devotion of several generations of mothers bears glorious witness to his achievement and a far greater recognition than anything we can do or say here. It is rather we who are honored here today, in showing honor to him we honor ourselves for the Medical Society can point with pride to his long and faithful service. He has always championed what is right, principles and strict adherence to ethics. When any problems arose calling for the establishment of a precedent, it was to him we turned for counsel. When we needed guidance from the past, it was his rich experience that served us. He has a conspicuous record of a faithful attendance to the meetings of this Society. For the younger members of our profession, he is a conspicuous exemplar of the great tradition of a family practitioner, who has endeared himself to patients and to brother doctors. Dr. James Higgins McIntosh was born in Newberry. He attended the local Academy and Newberry College, graduating at the age of 17 with an A.B. degree. He was graduated from the College of Physicians and Surgeons in New York City in 1888 with a degree of Doctor in Medicine. He then accepted a position on the Staff of Bellevue Hospital for two years. The last year he was associated with the Society for the lying in. It was largely through his efforts that the original Broome Street Dispensary became a success and a permanent lying in institution. He then returned to Newberry to practice medicine. In 1900 he moved to Columbia and entered practice here. He soon became a leading member of the medical profession and endeared himself to many.

Among the many honors that have been bestowed upon him may be mentioned Chief of Staff of the Baptist Hospital. He has been President of the Columbia Medical Society, Seventh District Medical Association of South Carolina, the South Carolina State Medical Association, the Tri-State Association and the Association of Surgeons of the Atlantic Coast Line Railway. During the world war he rendered his country invaluable service on the local draft board for eighteen months. He has now been actively engaged in the practice of medicine fifty-four years. Of this, forty-two years have been spent in Columbia.

Sir: We make this presentation with both humility and pride. We feel humble in the face of your years of service. We are proud in this gathering to point to the achievement of a distinguished brother member of the Society.

We have for a long time wished to express to

you our admiration for you and our appreciation of your service in the alleviation of human suffering. You have been an inspiration to us. With the love and respect of this Society, in which we are joined by your patients and friends throughout the State, I present this pitcher. The inscription:

In appreciation of a long life spent unselfishly in the service of humanity and as an expression of our friendship and esteem, this token is presented to Dr. James H. McIntosh by his medical colleagues of Columbia. May 20, 1942.

Please accept it as only a small token of our feeling for you. May you long have the health and happiness which you now enjoy as just fruits of a long and successful career.

Major Mayer: I will ask Dr. Bunch and Dr. Adcock to escort Dr. McIntosh to the rostrum. (Dr. McIntosh is brought up and the entire assembly rose in his honor.) Sir, we are humble in the face of your long years of service and we are proud for the accomplishments and achievement you have attained in this community and for the service you have rendered in the alleviation of pain to mankind. We have long felt we wished to express to you our admiration for your achievements and now with the love of this society I present to you this pitcher and these goblets. The inscription on the pitcher reads: "In appreciation of the long life spent unselfishly in the service of humanity and as an expression of our friendship and esteem this token is presented to Dr. James H. McIntosh by his medical colleagues of Columbia. May 20, 1942." Please accept it as a small token of our feeling for you. May you have long years of health and happiness which you so much deserve for the successful career which you have spent. (Applause.)

Dr. McIntosh: My 42 years with the Columbia Medical Society have been a constant pleasure. I can look back to many recollections of various happenings but this occasion this morning comes in the nature entirely of a surprise to me and I do appreciate it most thoroughly. I thank one and all of you for giving me so many happy moments. I thank you. (Applause.)

The Chair: I know each of us are proud to see the Columbia Medical Society honor an ex-president of the South Carolina Medical Association. Dr. McIntosh is an example of a great many doctors in this state, he has had a life of useful service in medicine to mankind. He has received recognition from his home society and the State Association. I wish to congratulate him. I only wish we could in some way recognize the service of a great many more men over our state that likewise serve not only the profession but mankind. These are rewards richly deserved by a great many but few receive them.

We will pass on to the next item which is a subject many of the younger fellows are deeply interested in, it is the "Procurement and Assign-

ment Service," and I would like to ask Dr. Buck Pressley to come forward and take charge. (Applause.)

Dr. Pressley: I am not going into a lengthy discussion of Procurement and Assignment. I am sure every man, every doctor in the audience knows as much of the working principles of Procurement and Assignment as I do. The thing that is most vital to the South Carolina Medical Association is how Procurement and Assignment is working out in our own state.

Early in February I was asked by Mr. Paul V. McNutt to serve as a chairman of the Procurement and Assignment service in South Carolina. I am quite sure the reason he asked me to render this service is the fact that last year and two years ago I served as Chairman of the Preparedness Committee. All of you will remember the preparedness drive put on a couple of years ago, which was instituted, in view of the trouble that we experienced in the World War I. Communities were deprived of medical help, there was no unification of entrance into the army and after entering the army the men were unable to be placed where they would be of most use. When we entered the war after December 8th, Dr. Frank Lahey, and those gentlemen who constitute the official Board of Procurement and Assignment, met and organized the Procurement and Assignment Service for the Medical profession. Now, this is a service, this is our own service, the Procurement and Assignment Service. Leaders thought that the medical profession could be best served by having the doctors placed where they were most useful, and above all things seeing that the service line proper was well protected, that no community would be deprived of medical service.

I want to take this occasion to express our thanks to Col. Sam F. Seely, who is executive officer of the Procurement and Assignment in Washington. Col. Seely had a tremendous job. This thing was instituted, as it were, on the spur of the moment, and he was given insufficient clerical aid. Office space was at such a premium in Washington he was located down on Pennsylvania Ave., up above a restaurant. The first trip I made to find him I took a taxi and told the driver I wanted to go to 601 Pennsylvania Ave. The taxi drove me up and stopped in front of the restaurant and said, "Here you are." I said, "This isn't right," and he said, "Yes, it is." They had him up there in two rooms and the amount of mail he was receiving daily would actually fill all space allotted him. He worked out of it. Now his address is 905 East Street, with more space and more help. The job he undertook for the medical profession was terrific. Everybody wanted to know what their duty was in the emergency and he worked out of it as far as he possibly could and I think has done a wonderful job of it. He is absolutely approachable and he will do exactly what the organization is set up for.

Then I want to express my gratitude to the members of the Committee in South Carolina, who have served with me in this work. The Council has given wonderful aid. It has responded to every call and has made it possible to work out the details of this organization. Now I feel, after four or five months work with it, that Procurement and Assignment is possible. I think it is the only means by which the medical profession can be best served. I am sure we have made mistakes, I am absolutely sure that these mistakes were not intentional but in the emergency we could not prevent them. On April 24th we had approximately 14,000 medical men in the army, as best as could be figured from the Surgeon General's Office. At the end of this year we are going to need 28,000 to 29,000 medical officers. The Army is faced with the necessity, or it places with us the responsibility of getting some 16,000 extra medical officers in the next 7 or 8 months. The central committee, of whom Dr. Frank Lahey is Chairman, called a meeting of all State Chairmen to Washington on April 24th. I am sure every member here has read the excellent report published by our Secretary, Dr. Julian Price. He attended this meeting with me and has written it up in fine detail. We have it here but we will not read it because I am sure every member here has read it and knows what it is all about. Every state was assigned a recruiting team, an army recruiting team. This team is to work in connection with the Procurement and Assignment service in this state. We are very fortunate indeed to have a man assigned to us, a native North Carolinian, who was in general practice and has been in the army for probably 18 or 20 months. He came in with the National Guards and we find he is certainly most helpful.

The State Chairmen of the Procurement and Assignment were asked to go home and call their committees together. Our Committee in South Carolina consists of the Council, the President, the President-elect and where it is necessary the officers of an individual county society. We were asked to do this,—to prepare a list of doctors whom we considered available for military service. Two weeks ago we met in Columbia and each councilor after conferring with the officers of the counties in his district brought in a list of doctors. Of necessity these doctors were in the low bracket according to age. It was emphasized and reemphasized in Washington that doctors up to 36 were desired more, than the ones between 37 and 45. In a very, very few instances will a man after 45 be inducted into the service unless he is qualified by a Specialty Board or is qualified to take over some specific job. Since the institution of this recruiting board we have placed two or three men above 45 to take over specific jobs in some hospital. After 55, all the information I can get from the Surgeon General's office is there will be very, very few after 55 years of age inducted into service.

I know you will want to know what South Carolina has done in the way of furnishing medical officers. I want to say this for the doctors of South Carolina; I have always felt this way and I still continue to feel it as I associate with them more and more, that the cross-section of the medical profession of our State represents the best there is in American manhood. In very rare instances, I think I could say practically none, has a man been approached that was not thoroughly patriotic, willing to do his duty in every respect, and while I realize deeply the responsibility of the job that I have at the same time I feel like the friendships that I have been able to establish among the doctors, in discussing their problems, has been worthwhile to me. It has brought home to me, more than ever, the loyalty of the medical profession.

As far as I am able to determine at this time, this board brought in the names of 124 doctors to be submitted to the recruiting board for talking over their problems, for commissioning and for entering into the service. If 75% of these doctors qualify for the Medical Service with the number of doctors that we now have in the army our percentage will run somewhere in the neighborhood of 25 to 27% of the doctors of the state, in active practice. We have, at the last census, 1401 doctors in the state, and that included retired men, men who have gone into other work, and was not the actual number of active doctors in the state. We had 1061 active doctors, that might vary 5 or 10 either way, but that is approximately the number that we had. On the basis of the number that we figure will be able to pass the physical examination, the number entering the armed services of our country will be 283 doctors. You can figure the percentage for yourself. You ask yourselves and you will ask me what is our quota, what are the other states doing? I am sorry I can't tell you. I don't know the proportions of the other states. In talking to doctors in Washington and those from the other states, I think our percentage is high. I wish I could tell you but after all that is neither here nor there. I was just thinking this morning of the friends I have in Australia, and these boys who went from South Carolina to Tokyo, and these doctors in Australia, today doing their bit. Whether we furnish more or less than the other states, and I am sure we are right at the top, our responsibility is not lessened one way or the other regardless of the percentage. Of course, we believe the City of New York could furnish 2500 doctors and be better off because there is a doctor on most every window in New York City.

The Procurement and Assignment up to this morning has cleared 83 doctors as being available for military service. I suppose it is not necessary to go into detail as to how this is done but here is just roughly how it is done. A man has applied or states his intention of going into the service. From the Procurement and Assignment service in Washington

his name is entered on a blank. This is sent to Chicago—four copies are sent to Chicago, where his rating as a specialist is determined. This blank comes to me and on it are two squares "available at present" or "essential." A cross mark says he is "available" or a cross mark says he is "essential" in his present location. We have cleared to the present 83 doctors. Those that have cleared as being "essential" in their present capacity, is 28. These were mostly young men. In a few instances, and I want you to bear this in mind (I feel this is awfully important) in a few instances a man has been declared "essential in his present location" but his patriotic duties or his feeling in his inner soul got so strong that he jumped the traces and went. I might say to Ben Wyman "Ben you can not go," but in the last analysis Ben has the last say so. If you are cleared as being "essential" or "available" you have the last say so, and it should be that way. We are still free Americans. But most physicians are following our suggestions.

Here is the last thing that I have from Washington, yesterday. It says on attached form (67), "we shall transmit to you the names and addresses of the physicians who have been cleared by you and the Chicago office. This information will be referred to the Army Rerectruiting Board in your State. We will prepare and forward four copies of this Form to you in each case. Forward one to the Medical Recruiting Board, one copy to this office, retain one copy for your files." This sentence is most important, "In the event this man refuses to be commissioned forward the remaining copy to the State Director of Selective Service." You can take that to mean what you want to. I suppose if a man is cleared as available, can be spared to his community, but refuses to accept a commission, he falls into the hands of his Local Draft Board.

The Selective Service Boards want every doctor to be placed where he can serve best. They don't want a doctor to be recruited, inducted into the army as a private, and the Boards of South Carolina have been very nice about it. As soon as they were assured that this man has signed a Procurement and Assignment blank or made application for a commission, he is immediately transferred to a deferred classification and is left alone. But, it seems to me from this letter that if the men who are available to go feel that they must not go, their names will be turned over to their Local Board or to Col. Springs office, to be disposed of.

I want at this time to introduce to you the man who is at the head of the Recruiting Board for South Carolina, Lt. Col. W. C. Goley. Stand up, please, Col. Goley. (Applause.) and Maj. Philips, who is Line Officer from the Adjutant General's Office, who will fix up your papers, commission you, give you the oath of Office. Major Philips (Major Philips stands) (applause.)

I want also to introduce a man who has been very

helpful to us in every way, the Commanding Medical Officer at Fort Jackson, our friend, Col. Scott. (Applause.) Do you have anything to say Col. Scott?

Col. Scott: I would like to express our appreciation of Dr. Pressley's work and of the work of the Council in getting this thing under way. Most of you received from me, not so long ago, a red bordered letter when we were making a very urgent appeal to get doctors. The time element was short and we needed to get as many doctors as we could in the shortest possible time. Dr. Pressley has responded and been extremely helpful and as he told you all of these cases are referred to his committee in order to assure adequate medical attention in the communities in South Carolina. I thank you very much. (Applause.)

During the day and tomorrow Col. Goley and Major Philips will be in Room 409. They will be glad to talk with anybody about the army problem and if you will drop in there anytime they will be glad to talk with you. I will ask Col. Goley if he has a word to say, if so we would be glad to hear from him.

Col. Goley: Thank you, I don't have a speech to make except that we want to help every doctor who is on this list to get a commission, if we can give him one, and we are here to give any service that we can and it is our hope that we can contact each man on the list and offer him a commission. All that we can do is to offer it to him and if there is any doctor here that is on this list that would like to have a physical examination while he is here come to Room 409 and we will arrange that for you so that you can be examined and know whether or not you can pass the physical requirements and we certainly want to cooperate in every way we possibly can. Thank you. (Applause.)

Dr. Pressley: Major Philips, from the Adjutant General's office, is most helpful to the doctors in every way in their paper work and in advising them. We would be glad to have a word from him, Major Philips.

Major Philips: There is a lot that can be said about this recruiting of medical officers and a lot of questions probably that you would like to ask and the best way to do, if you don't get a chance to ask today, is to write your questions in. The proper address is Medical Department, Officer Recruiting Board, Station Hospital, Fort Jackson, S. C. Our territory is South Carolina and by the way I am a South Carolinian myself. Some seemed to think we were asking too much of South Carolina doctors but as a South Carolinian I have never tried to get out of any of this military business and I don't mind asking South Carolinians to do a little more than their share.

Col. Scott: I extend an invitation to you to visit our hospital. We have quite a large institution and you will be surprised with the type of equipment

and facilities we have to take care of the sick and the organization that exists there. We would be very glad to see you singly or in groups.

The Chair: We deeply appreciate these army men coming and explaining this to our doctors. I think it is a thing uppermost in the minds of a great many doctors in this State and it is also a vital subject to those who are to be left behind. I hope we understand it better and if not they have told you where you can get further information.

I would like to extend to the doctors the privilege of the floor of this meeting. We would be glad to have you come meet with us. I understand Col. Grant is in the room and I will ask Dr. Weston to present him.

Dr. Weston: It gives me great pleasure to introduce an old friend of ours, Col. David N. W. Grant, head of the Medical Corps, U. S. Army Air Forces, who will speak this evening. Col. Grant. (Applause.)

Col. Grant: Gentlemen, I didn't intend to say anything this morning, particularly in connection with recruiting. I know the army is very short of medical officers and I am going to say very little except to supplement what has already been said. The Air Force is just as short as the army. The Air Force happen to be on a separate allotment and I just mention there is an opportunity of getting into the Air Force. Figures were mentioned which did not include the Air Force. We have five hospitals as large as Walter Reed or larger. The largest being 1850 beds. We had 2700 doctors and my procurement is a little under 10,000 as of December, 1942. You no doubt have seen in the Journal of the A. M. A. where the Air Force went on their own procurement. Since that time we have contacted over 4000 doctors. We are getting them now at the rate of 40 and 50 a day, commissions actually being issued as fast as they could be processed. I am just adding this, not that I am putting on a recruiting campaign. I know these gentlemen are up against it, they are trying to get officers for the army, as a whole, and I want to remind you there is such a thing as an Air Force, and we would be very glad to hear from you. (Applause.)

Col. Goley: I want to apologize for not mentioning the fact that for any doctor that comes to us who wants to go in the Air Force we stamp his paper "Air Corps" and send it on through. We have been doing that and we want doctors whether it is for the Air Corps or the Army, any of them.

(Dr. Price takes Chair.) At this time it gives me pleasure to present to you the President of our Association for his Inaugural Address, Dr. George Truluck.

(Dr. Truluck delivered his address, printed in The Journal May, 1942.)

Wednesday P. M. 2:30

The Chair: The meeting will come to order. We will turn back to the business not finished this morning. We will hear from the Memorial Com-

mittee of which Dr. Brabham is Chairman.

(Names of deceased physicians and tribute by Rev. F. B. Estes printed in last issue of the Journal.)

The Chair: This concludes our Memorial Exercises. We will now continue with our regular program. First taking up where we left off—our first speaker is our Guest Speaker from the South Carolina Pharmaceutical Association, Dr. Joseph B. Hyde.

Dr. Jos. B. Hyde: Mr. President, members of the Medical Society of South Carolina, I am very much honored by being the only practicing pharmacist in such a large group of physicians. And I am usually able to hold my own in serving one physician at the time but never in such an overwhelming majority. I am fully aware of the privilege and the pleasure which was given me in my selection as the Exchange Speaker from the South Carolina Pharmaceutical Association to the Medical Society of South Carolina. I presume, since I have been a member of my own association 42 years, that this is the reward for my services. During these years I have had the friendship and companionship of many physicians, some of whom I have seen rise to success and usefulness and then pass away. From these friendships I have gathered much excellent advice and much wholesome knowledge. The first lesson which I learned from a physician was many years ago, and that lesson was from the well-beloved Charles M. Reese, physician and surgeon. One evening I was asked to accompany Dr. Reese, and another young man came in and said, "Good evening, Doc." Some of us remember the dignity and the reserve of Dr. Reese and I was not surprised to here him say, "Only darn fools and little children call physicians 'Doc.'" That was a lesson which I learned very early in life. It is no title whatsoever. The use of the word "Doc" for "Doctor" even as a sign and token of affection is rather distasteful.

The other afternoon there were several of us standing in front of my store watching three big powerful United States Army bombers flying low, the most marvelous sight and most inspiring. As we watched them we were joined by a little lady. As they flew in regular formation, two in front and one behind, kind of triangular, this little old lady said to me, "Do you know why they fly that way?" I said, "No, why?" "Because," she said, "If one starts to fall the other will catch him." I am sure Col. Grant will have another reason to give for that. But even at that the old lady spoke of the cooperation and coordination, which is most applicable to any phase of life today. So, I speak to you very briefly upon the subject of emergency cooperation.

There are many problems which your association and mine may have to solve together. This growing scarcity of certain types of drugs, important everyday drugs, such as belladonna, digitalis, and menthol, and camphor and the growing demand in

hospitals, especially in government hospitals for phenol, alcohol, acetone and many others. We were told a year ago that we had three years supply of quinine in this country and three years supply of opium but that was before the fall of Java and we have been informed, by recent order of the government, quinine is to be used only as an antimalarial and opium and its derivatives can only be stocked in a very normal everyday way. And yet these orders and these dictates are necessary that we should work together and cooperate in the all out effort to win this war. Of course, perhaps it would have been worse in the days I spoke about a few minutes ago when pharmacists had some three score tinctures and some three score fluid extracts and a stock of crude drugs. I have seen many changes in materia medica and therapeutics.

Then there is another problem which probably worries us more than it worries you and that is the problem of transportation. The governments' armed force and their supplies must come first, we know and acknowledge that. Orders are being delayed and we are waiting longer to receive fresh supplies and the manufacturers are behind in their shipping, due to the small forces with which they operate and transportation lines themselves are much slower than they were a short time ago. All of this, of course, is a problem, a growing problem to a man who is practicing your profession or mine but as yet we have not reached any great sacrifice. We are not doing without now. We are living very much the life that we lived before, although I am sure we are prepared, all of us, to have greater sacrifices. Then, there is a problem which is uppermost in your mind today, and that is the problem of how are you going to spread your services to those who remain behind and have to have medical attention with the constant and growing demand for physicians in the armed forces. The problem is a problem that will be acute. You probably more than anyone else will have to spread more, you will have to work harder. I don't think any other profession is going to be effected so much as you are. This is a stupendous war. Men talk and write of millions of soldiers, they talk about tanks and armaments by the thousands and tens of thousands, and they speak about professional men by the tens of thousands. It is a stupendous effort and an effort to which we shall realize more and more, thank God we are Americans.

Now, of course, that shortage which applies to the medical profession also applies to the pharmaceutical profession. The army I think it is, wants 5,000 men in the pharmaceutical service. Five thousand men. We as a pharmaceutical association and as teachers of pharmacy have a big job to perform, and it is going to mean that in our own state the conditions will prevail as in the mid-west today. Some of those drug stores are closed, signs on the doors "closed for duration of the war." Other drug stores and many of them will be con-

ducted by the proprietor himself, without any efficient help. Anyone who has even for a short time conducted a drug store, working 12 to 18 hours a day in that drug store, all by himself, needs the sympathy of the public. But in any cooperation whatsoever and with any object which has for its purpose patriotism, service to country, and service to humanity, I pledge you the sincere and the earnest cooperation of the South Carolina Pharmaceutical Association. (Applause.)

The Chair: I am sure I voice the sentiments of each and everyone that we deeply appreciate having Dr. Hyde with us representing the South Carolina Pharmaceutical Association.

We shall go on now with the program. The next paper is "Problems of a Pre-Natal Clinic," by Drs. D. S. Pope and W. A. Hart of Columbia, S. C. (Paper read by Dr. D. S. Pope.)

The Chair: We will hear from Dr. W. R. Mead of Florence on the subject of Backache. (Dr. Mead's

paper will be found in this issue of the Journal.)

The Chair: We will now present a new feature, The Question Box, under the able management of Dr. N. B. Heyward.

(The Question Box is printed in full elsewhere in this Journal.)

Thursday A. M.

The Thursday morning session was presided over by Dr. T. A. Pitts, newly inaugurated President. Papers were presented by Drs. D. S. Pope and W. A. Hart, and by Dr. Hines Roberts of Atlanta. (These papers will be published in the Journal.)

Major General Lewis B. Hershey also made an address which was published in the June issue of the Journal.

This concluded the official program of the Association and adjournment followed. Following this the South Carolina Fracture Committee presented a short program for its members and friends.

BOOK REVIEWS

MANUAL OF STANDARD PRACTICE OF PLASTIC AND MAXILLOFACIAL SURGERY

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Here, within the confines of a single volume, appears the best which there is at the present time in the field of plastic and maxillofacial surgery.

This volume is one of a series developed under the auspices of the Division of Medical Sciences of the National Research Council to furnish the medical departments of the United States Army and Navy with compact presentations of necessary information in the field of military surgery. The Subcommittee on Plastic and Maxillofacial Surgery, which edited this book, is composed of Drs. Robert H. Ivy, Chm., John Staige Davis, Joseph D. Eby, P. C. Lowery, Ferris Smith, Brig. Gen. Leigh C. Fairbank, Medical Corps, Lt. Col. Roy A. Stout, Dental Corps, U. S. Army.

Although this book is prepared primarily for the military surgeon, it should also prove a highly valuable source of professional information for any surgeon desiring knowledge concerning plastic and maxillofacial surgery. Concisely written, beautifully illustrated, studded with epigrammatic statements which should stick in one memory, it is a book which any surgeon should cherish.

PHYSICIANS' REFERENCE BOOK OF EMERGENCY MEDICAL SERVICE

Published by E. R. Squibb and Sons, New York
E. R. Squibbs and Sons has made a real contribution to medical literature and to the medical

profession in the preparation and presentation of this volume.

The book is a compilation, chiefly from British literature although there are some articles by American writers, of articles dealing with the practical experience and lessons acquired in handling civilian war casualties. It is our fervent hope that the average American physician will not need to deal with the types of injuries discussed in this book, but if he does—a reading of this book will stand him in good stead.

The book is divided into three sections; Precautionary Measures, Hospital Services, Management of Casualties. In the last section are chapters dealing with; Shock, Burns, Wounds and Fractures, Wound Infection, Blast Injuries, Crush Injuries, War Gas Injuries.

If an ounce of prevention is still worth a pound of cure, it would behoove every physician to acquaint himself with what is new in the field of treating war casualties—and a book such as this will help him to do just that.

HEALTH EDUCATION OF THE PUBLIC

W. W. Bauer and Thomas G. Hull

W. B. Saunders Co., \$2.75

The title of this book does not give a true idea as to its contents. It is not just another monograph on the general subject of health education but is, as the authors point out in the introduction, "a book designed for use as a practical handbook in health education by physicians who are chairman of committees on public relations or on health edu-

education for state and county medical societies; by health educators, medical and nonmedical, in state, city and county health departments; and for those students of public health who wish to make health education a part of their training, as well as for the public health nurse who is primarily a health educator."

Upon the thesis that health education is not only desirable but that "whatever individuals may think about the desirability of health education, we face a condition, not a theory. The public is eager for information about health. Quacks, fadists, racketeers, cranks, and those with something to sell are feeding this appetite. Unless there are enlightening forces, the public will be seriously misled, to its own detriment," the authors take up the various methods of health education and in concrete and interesting style show the best form in which a program can be put into action.

A chapter is devoted to each of the following: the radio, the exhibit, the meeting, pamphlets, the newspaper, the motion picture, stereopticon slides, the magazine article, correspondence, and books.

Speaking of radio talks (and numbers of physicians have been called upon and will be called upon for short health talks) the authors tersely suggest, "First tell them what you are going to talk about; then talk about it and then tell them what you have just been talking about. . . . Every radio talk should have three constituents—a smile, a tear, and an idea." They also give many ideas with regard to the method of presentation, the length or the talk, etc.

In the chapter devoted to meetings, and this chapter will be of particular interest to the "speaking" physicians, there is presented a list of subjects which have been found especially acceptable over the country. They also present concrete suggestions as to the organization or the meeting itself, the publicity necessary, and the obligations of the speaker and of the audience.

Health Officers and nurses will find much in the

chapter on the exhibit, which includes the use of posters and charts, which they can utilize in their every day work.

All in all, this is an excellent handbook which should be at the elbow of every physician and nurse who is playing his or her part in the great program of educating the public in matters of health.

BLOOD GROUPING TECHNIC

A Manual for Clinicians, Serologists, Anthropologists, and Students of Legal and Military Medicine

By

Fritz Schiff, M.D., and Wm. C. Boyd, Ph.D.

with foreword by

Karl Landsteiner

1942, Interscience Publishers, Inc., New York, N. Y.

This book brings up to date a clear understanding of the principles of methods of blood grouping and accurate information in regard to sub-group and the Rh factor, which is of great value to all physicians. There is also a carefully arranged description of the technical methods used for the classification of blood group and the determination of suitable donors for the giving of blood.

Special application of the principles of blood grouping is fully described, transfusion accidents, problems in relationship and paternity and the forensic application of blood groups. Methods for obtaining and storing of blood plasma are well described. An admirable system of cross references is given which enables the reader to easily find what he particularly desires to refer to.

The title Blood Grouping Technic does not fully cover the value of the book for principles and discussion is comprehensively given to make it of value to those to whom the technical procedures are of only passing interest.

It is unfortunate that Dr. Schiff did not live to see the completion by Dr. Boyd of the translation and additions so ably presented.

F. B. Johnson, M.D.

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SOUTH CAROLINIANA

J. I. WARING, M.D., CHARLESTON, S. C.

The pens of the profession have been moderately busy in recent months and the products cover a wide field. On the surgical side, Dr. F. E. Kredel of Charleston has contributed two articles, one of which deals with a method of utilizing collateral cerebral circulation by means of muscle graft in an effort to benefit damaged areas of the brain.¹ He describes technique and results in a small number of cases, one of which was cerebral thrombosis. The temporal muscle is grafted to a denuded portion of the cortex. Some of the illustrations are by the author. Dr. Kredel has also written on the surgical treatment of cardiospasm by means of a pyloroplastic type of operation via the abdominal approach.² He reports one case in an eighteen year old boy.

Likewise in the surgical line is an article by Dr. C. W. Evatt, Charleston, on the results from tonsillectomy.³ In the newspaper world the old saw runs that when a dog bites a man, that's no news, but when a man bites a dog, that's news. When a throat surgeon writes conservatively about the limitations of tonsillectomy, that's good news for many an innocent whose tonsils are about to come in range of the snare. If Dr. Evatt's sane advice is followed, there will be a healthy decrease in tonsillectomies in the coming years. The discussion of this paper is interesting and those who feel dubious about the question would do well to read some of the articles by Dr. A. D. Kaiser.

Dr. G. T. Tyler, Jr., of Greenville has presented an appraisal of vaginal hysterectomy and feels that the operation has a very proper place.⁴

On the medical side there is to be found an excellent article on cystic disease of the lung by our president-elect, Dr. Wm. Atmar Smith, of Charleston.⁵ The etiology is discussed, the rather baffling clinical signs are considered, and 5 cases are reported. The article is well illustrated. Two articles on heart disease have appeared recently. Dr. T. R. Littlejohn of Sumter has covered the conditions which are

often confused with true heart failure, such as gallstones, pneumonia, hysteria, and arthritis of the spine, and has given pertinent illustrative cases.⁶ Dr. Hugh Smith of Greenville has reported and discussed two unusual cases of congenital heart disease.⁷ Drs. R. M. Pollitzer, John Simmons, and I. Yasser have given a detailed report and discussion of a rather rare condition of miliary tuberculosis with tuberculides, and have stressed the importance of X-ray and tuberculin tests in finding unsuspected tuberculous infection.⁸ Another contribution from Greenville is by Dr. I. S. Barksdale, G. K. Mullenix, R. N. and L. B. Fuster, R. N. who discuss the difficulties of control of contacts of patients with diphtheria and scarlet fever.⁹ They feel that hospitalization is desirable for carriers until treatment by local use of bismuth violet solution or by tonsillectomy can render the carrier free of the organisms in question. The discussion by Dr. Russell Cecil in regard to streptococcic infection is interesting. He feels that sulfadiazine is useful in preventing complications in "colds."

Dr. K. M. Lynch of Charleston has published a clinical and pathological report on silicosis, pointing out that there appears to be a systemic distribution of silica as well as the better known pulmonary collection.¹⁰

Anatomical studies on the pyramidal tract by Dr. A. M. Lassek, Charleston, are to be found in three different journals, and are a part of the research which Dr. Lassek has been pursuing for some time.^{11, 12, 13}

Dr. R. B. Taft, of Charleston has contributed an article on radium recovery by means of the Geiger-Muller counter.¹⁴ And has another report on the amount of radiation received by airplane pilots from their instruments, which appear to be harmless.¹⁵

Dr. G. McF. Mood and E. H. Fowler, Charleston, have written a report on a method of typing pneumococci which allows more leisurely work.¹⁶

A plea for more consideration of the pre-medical group, by A. M. Lassek is timely when the procurement of a new crop of medical students is to be considered a serious question.¹⁷ He suggests that the premedical man be recognized early as serving an apprenticeship, and that the change of pace from academic to medical school be made less painful.

1. Kredel, F. E.: Collateral cerebral circulation by muscle graft. *Southern Surgeon*, 11:235, April, 1942.

2. Kredel, F. E.: Surgical treatment of cardio-spasm. *South. Med. & Surg.* 104:258, May, 1942.

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4. Tyler, G. T., Jr.: Vaginal hysterectomy in uterine prolapse. *South. Med. & Surg.* 104:203, April, 1942.

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DEATHS

Dr. E. Clay Doyle, 68, prominent Oconee County physician, died July 10, at his home in Seneca. He received his education at Presbyterian College, Clinton, the University of Virginia and Bellevue College, New York, where he received his medical degree in 1897. After his graduation he returned to Seneca to practice medicine and to become a leader in his community. Dr. Doyle is survived by his wife, Mrs. Mary Cherry Doyle, and a brother, Dr. Will R. Doyle, also of Seneca.

Dr. W. A. Whitlock, Jr., 42, practicing physician of Laurens, died at a Columbia hospital July 18, after an illness of ten days. After graduating from Furman University, Greenville, and the Medical College of the State of South Carolina, Charleston, Dr. Whitlock opened offices in Aiken, S. C., where he practiced until May, 1941, when he moved to Laurens. Dr. Whitlock is survived by his wife, Mrs. Pliny Timmerman Whitlock, his parents, Dr. and Mrs. W. A. Whitlock, Sr., of the Kitchings Mill section, and two sisters.

Relatives have been notified of the death of Dr. Allan John Jervey, Jr., of Tryon, N. C., and Charleston, S. C., from wounds received at the battle of Midway.

Dr. James Henley Mills, 61, of Mayesville, died suddenly on July 17. Born in 1881, Dr. Mills received his medical training at the Medical College of the state of South Carolina, graduating from that institution in 1907. He is survived by his widow, Mrs. Mary Brunson Mills, two daughters and two sons.

Dr. Robert M. Graham, 55, of the Navy Yard section, died at Roper Hospital, Charleston, on July 20. A native of Lake City, Dr. Graham graduated at the Medical College of the State of South Carolina in 1913. Surviving are two daughters, two sisters and three brothers. Dr. Graham was a veteran of the World War.

NEWS ITEMS

Announcement has been made of the marriage of Dr. Edith Eskrigge of Columbia, to C. Wycliffe Haynes also of Columbia, on July 8, in Highlands, N. C.

Three more Charleston physicians have reported for duty in the armed forces. They are Dr. Henry C. Robertson, Jr., Dr. William J. Ball, and Dr. Robert J. Baker.

The South Carolina Medical College began its extra session on June 25th. The new freshman class has fifty members.

Dr. Bothwell Graham, Third, of Clinton, has left for Parris Island where he is assigned to the staff of the naval hospital as a lieutenant.

Major Charles H. Fair, formerly of Greenville, has been promoted to the rank of Lieutenant-Colonel in the U. S. Medical Corps.

Dr. A. J. Buist, Jr., of Charleston, who has been on sea duty with the fleet in the Pacific for six months, has returned home and will report for duty at the Charleston Navy Yard.

Dr. William Weston, Jr., of Columbia, was elected President of the Second District Medical Association at a joint meeting of that

organization with the Columbia Medical Society at Hotel Columbia on July 13. Other officers elected were Dr. R. B. Dunnivant of Edgefield, Vice President, and Dr. D. S. Asbill of Columbia, Secretary-Treasurer.

News has been received of the marriage of Dr. Philip Assey of Georgetown.

Dr. O. M. Goodlett, Jr., Pelzer, S. C., was also married recently.

Dr. and Mrs. E. W. Masters, Columbia, are being congratulated on the arrival of a baby girl, June 19, 1942.

At the June meeting of the Spartanburg County Medical Society Dr. John Elliott of Salisbury, N. C., talked to the members about blood plasma.

Dr. R. Murdock Walker of Sumter has reported for duty with the armed forces.

Three physicians from Bennettsville have left recently to serve in the Army of the United States. They are Drs. P. M. Kinney, William Evans and L. Paul Barnes.

Dr. David R. Stack, Jr. of Charleston is now stationed at Camp Pickett, Virginia.

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HONOR ROLL (Continued)

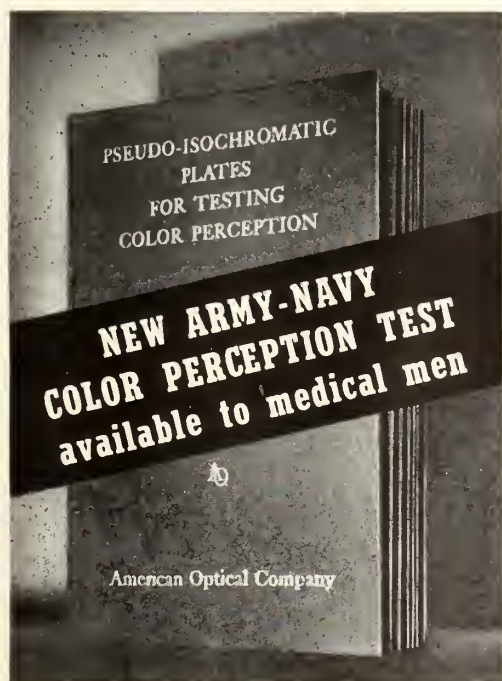
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 Dr. Hazel B. King, Lake City
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 Dr. Leon D. Wells, Holly Hill
 Dr. W. K. Fishburne, Moncks Corner
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 Dr. John Townsend, Charleston
 Dr. W. P. Turner, Greenwood
 Dr. P. K. Switzer, Union

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 Dr. J. M. Symmes, Greenwood
 Dr. Catherine N. Munro, Columbia
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 Dr. G. H. Zerbst, Columbia
 Dr. J. P. Young, Chester
 Dr. H. L. Baker, Hemingway
 Dr. D. E. Walker, Rock Hill
 Dr. H. A. Gross, Barnwell
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Some Observations on Bacterial Meningitis*

M. HINES ROBERTS, M.D.

MEDICAL DIRECTOR OF THE HENRIETTA

EGLESTON HOSPITAL FOR CHILDREN

ATLANTA, GA.

Bacterial meningitis is frequently encountered in infancy and childhood. Before the advent of chemotherapy one undertook the treatment of all cases of septic meningitis, with the exception of meningococcic meningitis, with an almost hopeless outlook. Fortunately today we have potent means at hand to fight these infections. At present, however, there is no unanimity of opinion as to the ideal methods of treatment for the various types of septic meningitis. There is much to be learned regarding the proper use of the sulfonamide drugs in meningitis. Undoubtedly, a greater knowledge of their potencies and dangers will pay handsome dividends in the health and lives of many children.

This paper is presented with the hope that a brief resume of the experiences of others, and our experience in the treatment of these infections will aid in clarifying certain problems which have arisen.

We have been particularly impressed during the past few years with the apparently increasing incidence of influenzal meningitis among the admissions to Henrietta Egleston Hospital for Children in Atlanta. The treatment of this disease has been of especial interest to the staff and will be discussed in considerable detail.

The relative frequency of the various types

TABLE I
SEPTIC MENINGITIS - HENRIETTA EGLESTON HOSPITAL FOR CHILDREN
1928 - 1942

	All Cases Treated			Before Chemotherapy			After Chemotherapy		
	Number	Deaths	Rate	Number	Deaths	Rate	Number	Deaths	Rate
Staphylococcus	6	5	83.3%	4	3	75%	2	2	100%
Streptococcus	17	16	94%	16	15	94%	1	1	100%
Influenza	30	24	80%	15	14	93%	15	10	66%
Pneumococcus	36	31	86%	19	19	100%	17	12	70%
Total	89	76	85%	54	51	94.4%	35	25	71%

Meningococcic Meningitis									
Total	All Cases Treated			Before Chemotherapy			After Chemotherapy		
	Number	Deaths	Rate	Number	Deaths	Rate	Number	Deaths	Rate
	45	11	24.4%	38	11	29%	7	0	0%

of septic meningitis as encountered in this hospital is summarized in Table I. A total of one hundred thirty-four cases have been treated during the period from 1928 to 1942. Of this number forty-five were due to the meningococcus and are analyzed separately from the other infections—for obvious reasons. The mortality rate for the entire group of meningococcic meningitis was 24.4%. Before chemotherapy there were thirty-eight patients treated with serum or antitoxin with a mortality rate of 29%. Since chemotherapy there have been only seven children suffering with meningococcic meningitis admitted to the hospital, with no deaths.

A study of the mortality rate, however, is not the sole criterion upon which therapy should be evaluated. Serious complications must also be analyzed. Twenty-seven of the thirty-eight patients suffering with this infec-

*From the Henrietta Egleston Hospital for Children, Atlanta, Georgia.

Read before Annual Session, S. C. Medical Assoc., Columbia, S. C., May 21, 1942.

tion survived without chemotherapy. Of this number thirteen were under one year of age, four of whom had developed hydrocephalus and two were blind; five were in their second year,—one of this number suffered with impaired hearing and vision; nine were over two years of age,—of this group one was blind in one eye, one was deaf and one partially deaf. A total of ten patients then survived the infection but with serious and permanent defects,—a complication rate of about 40%. In contrast to this figure,—of the seven patients receiving chemotherapy only one child showed an important complication. This patient was over two years of age and at the time of discharge was blind and spastic. The complication rate in this group was approximately 15%.

There were eighty-nine cases of septic meningitis due to the four other most frequently encountered organisms producing this disease. The mortality rate for the entire group was 85%—before chemotherapy being 94.4%; after chemotherapy 71%. It is important to note that this improvement in mortality rate took place only in the cases of influenzal and pneumococcal infections. However, it is striking to observe that streptococcal meningitis has practically disappeared in this hospital since the advent of chemotherapy; and consequently these comparative figures on mortality taken before and after chemotherapy are of little value. The splendid reduction in the incidence of this disease is undoubtedly due to the fact that suppurative otitis media and

be seen from Table II no child has died as the result of mastoiditis since 1938.

Further explanatory remarks are indicated in regard to the statistics for influenzal meningitis. Before chemotherapy fifteen cases were treated with one recovery. This child who recovered received 140 c. c. of anti-influenzal serum (intravenously and intramuscularly) over a period of six days. She is perfectly well today without complications. Of the fifteen cases treated since chemotherapy five received only sulfanilamide and serum—all died. Of the ten cases treated since the advent of sulfapyridine and sulfadiazine five have recovered. Further since November, 1940 when the intensive treatment with sulfapyridine and sulfadiazine was adopted seven patients have been observed only two of whom have been lost. The details of this treatment with case reports follow later in this paper.

The incidence of septic meningitis, according to years, as shown in Table III brings out

Table III.

INCIDENCE OF SEPTIC MENINGITIS 1928-1942 HENRIETTA EGLESTON HOSPITAL FOR CHILDREN													
	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
Meningococcus		11	5	7			3	1	7	3	2	3	2
Pneumococcus	1	3			4	2	1	2	2	3	3	7	4
Influenza			1	2		1	2	2		5	5	3	3
Streptococcus		1	5	5			1	2	2		1		

some rather interesting trends. First, as already noted, streptococcal meningitis has been encountered only once since 1937. The reason for this as explained in the discussion of Table II seems undoubtedly due to the excellent results obtained with the sulfonamide drugs in the treatment of otitis media and mastoiditis.

Although this series is small it appears that influenzal meningitis is definitely on the increase in Atlanta. As will be seen in Table III, twenty-two of the thirty cases treated during the fourteen year period under observation occurred in the past six years. Whether this apparent trend is of true significance is uncertain at this time.

Pneumococcal meningitis has showed little variation in incidence during the period of this study, save for the year 1939 when it was

Table II

Suppurative Mastoiditis
Henrietta Eggleston Hospital for Children
Atlanta, Georgia

	1936	1937	1938	1939	1940	1941
ACUTE	21	10	15	7	7	2
CHRONIC	8	4	0	2	5	2
TOTAL	29	14	15	9	12	4
DEATHS	4	3	4	0	0	0

mastoiditis have been greatly reduced in the four years by means of chemotherapy. As will

observed almost twice as frequently as in any other year.

The annual incidence of meningococcic meningitis for this small group follows quite definitely the trends which have been observed in the national figures for this disease. Definite peaks occurred in the nation in 1929-30 and 31 and again in 1936 with a great decline in the years 1932-33.

TABLE IV Age Incidence of Septic Meningitis Hennetta Eggleston Hospital for Children - Atlanta, Ga.					
	Meningococcus	Pneumococcus	Influenza	Streptococcus	Staphylococcus
Under one year	22	15	16	4	3
One to two years	7	7	6	2	2
Over two years	16	14	8	11	1
Total	45	36	30	17	6

Table IV gives the age incidence of septic meningitis as observed in this group. 50% of the cases of meningococcic, pneumococcic, influenzal and staphylococcic meningitis were encountered during the first year of life, whereas streptococcic meningitis is quite definitely a disease of older childhood—60% occurring in children over two years of age.

A word as to the trends in the therapy of septic meningitis may be of interest before giving our experiences with the modern therapeutic agents. The early specific therapy with antimeningococcic serum intrathecally, gave remarkably good results. The introduction of the intravenous use of both serum and antitoxin, so ably advocated by Hoyne, enhanced the value of this treatment considerably. The results of the treatment of influenzal and pneumococcic meningitis with anti-sera in the hands of most observers were almost universally bad.

The advent of the sulfonamide group of drugs suddenly placed into the hands of the physician a wealth of potent weapons with which to fight these infections. Although there is as yet no unanimity of opinion as to the choice of drugs for each type of meningitis, much progress has been made.

Certain authorities seem loathe to omit anti-meningococcic serum in the treatment of this infection in spite of the brilliant results obtained with the sulfonamide drugs. As late as 1941 Keefer¹ advocated the intravenous use of (anti-meningococcic) serum for children under two years of age with no mention of chemotherapy, although he advised chemotherapy exclusively for the adult.

As investigation progresses, however, it seems obvious that chemotherapy will replace anti-meningococcic serum and antitoxin.

Hodes² and Strong recently reported one hundred ten patients suffering with meningococcic meningitis treated with sulfonamides alone. Twelve cases died. They conclude that sulfathiazole and sulfadiazine are superior to sulfanilamide in the treatment of this disease.

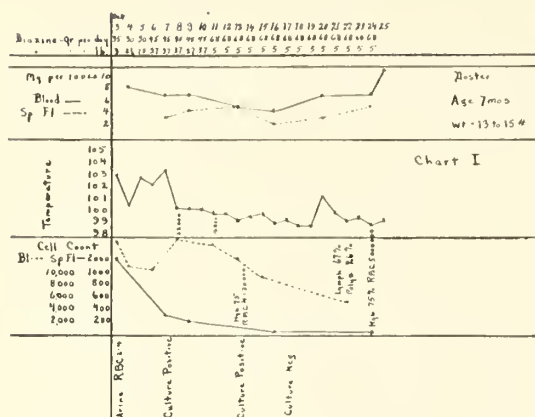
Rundlett³, Gnassi and Price report twenty three consecutive patients cured of meningococcic meningitis with sulfadiazine alone. A spinal fluid level of eight to twelve mg% was as a rule adequate.

Spinks in his excellent monograph uses sulfapyridine alone in the treatment of meningococcic meningitis with excellent results. He advises two to three grains per pound body weight each twenty-four hours administered intravenously every eight hours for two or three days, after which the drug is given by mouth. He suggests that the drug be continued for at least one week after temperature is normal.

Bankston in the *Lancet* in 1941 reports that sulfathiazole alone is effective in the treatment of meningococcic meningitis even though the spinal fluid concentration was not above 1.2 mg%.

Our personal experience with the various sulfonamides in meningococcal meningitis may best be presented in the form of case reports.

Billy D., age seven months, weight thirteen and one-half pounds, became suddenly ill on October 1, 1941 with grunting respiration, muscular twitchings and temperature 103°. Severe convulsions occurred on October 2nd. He was admitted to the hospital on October 3rd. The physical examination revealed an acutely ill infant with definite evidence of meningeal irritation. Chart I gives in detail



the course of the illness and the effect of therapy. The upper division of the chart indicates the total drug administered each day and the grains per pound body weight each twenty-four hours. Sulfadiazine alone was administered by the oral route. In the beginning three grains per pound body weight for each twenty-four hours was given, but on account of a persistently positive spinal fluid culture the dosage gradually increased to five grains per pound per day. The second section of the chart shows the drug concentration in both blood and spinal fluid. It is interesting to note that the blood concentration fell steadily from the 4th to the 16th of October in spite of a gradual increase in dose. There was a rapid drop in spinal fluid cell count from the beginning of therapy. The spinal fluid culture was found to be negative on the 17th of October or the fourteenth day of treatment when the blood concentration of the drug was approximately 6 mg.%, and the spinal fluid concentration was between 2 and 3 mg.%. The drug was continued at the maximum dose for one week after the cultures were negative. No untoward effects on kidney or blood were noted in spite of the large doses of sulfadiazine given. The infant was discharged in good condition with no evidence of complications.

The following case of Terrill T. suffering with meningococcic meningitis is briefly summarized to show the combined effects of treatment with sulfadiazine and sulfapyridine. The baby was twenty months of age and weighed twenty-five pounds. He was admitted on December 11, 1941 with a story of sudden high fever for eighteen hours; drowsiness and

a rash for the past eight hours. On admission the infant was stuporous, temperature was 102.6. There was no evidence of meningeal irritation; petechiae were scattered over trunk and extremities. The spinal fluid cell count was 2,565 with a positive culture for the meningococcus.

The following daily dosage was employed:

Dec. 12-Dec. 17—Sulfapyridine grains 15 (I. V.)—Sulfadiazine grains 45 (P. O.) Blood Concentration 11 mg.%.—Spinal Fluid Concentration 6.9 mg.%.
 Dec. 18-Dec. 26th—Sulfadiazine grains 90 (P. O.) Blood Concentration 9.8 mg.%.
 Dec. 27-Jan. 1st—Sulfadiazine grains 45 (P. O.) Blood Concentration 6.8 mg.%.
 On December 17th the spinal fluid culture was negative.
 On December 17th the spinal fluid cell count was forty-two.
 On December 22nd the spinal fluid cell count was five.

Except for a moderate reduction in hemoglobin no untoward effects of the drug were noted. The child was discharged from the hospital eighteen days after admission. He seemed to be perfectly well and has remained so.

As stated at the outset of the paper, this investigation of our experience with septic meningitis was prompted by the apparent increased incidence in influenzal meningitis and the very encouraging results obtained in treating this infection with the sulfonamide drugs.

In influenzal meningitis we were dealing with a very grave infection which in the past was practically 100% fatal and therefore heroic measures were justified in fighting the disease, although such measures might not be without a definite danger to the patient. We felt that if chemotherapy were to succeed the organism must be attacked quickly and with what appeared to us massive doses of the drug. For speed, therefore, we have introduced the drug intravenously in large doses for several days, in addition this has been supplemented by oral therapy and finally in the latter days of treatment, the oral therapy has replaced the intravenous therapy. Our total sulfonamide drug administration has varied between four and six grains per pound body weight in each

twenty-four hours. The following case reports give in detail blood and spinal fluid concentration obtained under this regime, the effect upon the infecting organism and the untoward effects upon the host.

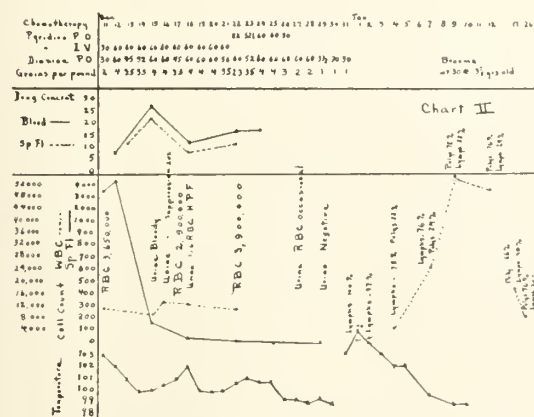
Bobby B. three years and four months developed fever in the late afternoon of December 10th. During the night temperature rose to 105°, he vomited and complained of headache. He was seen in the home at 10:00 A. M. on December 11th. The temperature was 104, throat was inflamed and tonsils enlarged. There was definite evidence of meningeal irritation. He was admitted to hospital at once. Chart II summarizes the treatment and its ef-

third section of this chart the blood and spinal fluid cytology are graphically depicted. The cell count in the spinal fluid was normal on the seventh day of treatment and the culture of the fluid was negative on this day.

The drug was continued at the maximum, both by vein and orally, for three days after the spinal fluid was apparently normal. At this time, the intravenous sulfapyridine was omitted but continued by mouth, along with the sulfadiazine for a period of five days. On December 26th, the fifteenth day of the illness, sulfapyridine was omitted; sulfadiazine was continued for five additional days, but only one gram per pound body weight was administered for the last three days. To summarize: Over a period of twenty days, 56 grams of sulfapyridine and 71 grams of sulfadiazine were administered.

Certain very interesting reactions were observed in this child which were attributable to the medication. On the fourth day of treatment, the urine was grossly bloody; on the fifth day there was a marked urinary suppression. It was determined to continue the drugs in spite of these findings. Large amounts of fluid were introduced into the vein with a very satisfactory response on the part of the kidney. The blood quickly disappeared from the urine, except for an occasional red blood cell noted at times throughout the illness.

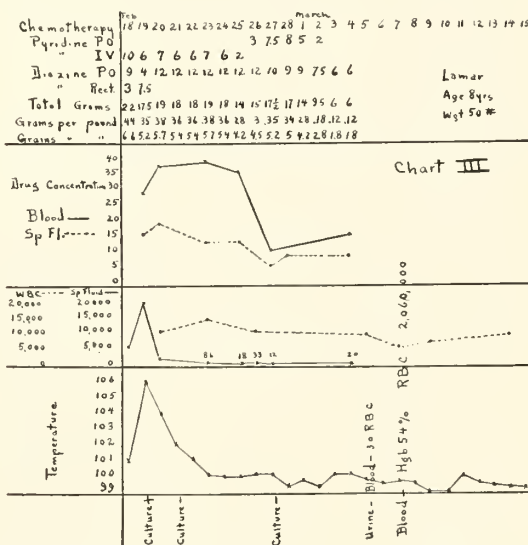
The effect upon the blood of this individual was also quite striking. The anemia became marked early, but by means of transfusions, the red blood cells and hemoglobin were adequately maintained. On the 21st day of the child's illness, when he seemed perfectly well, there was a sudden jump in temperature to 105 degrees; the throat was inflamed; the spinal fluid normal. A blood examination revealed a total leucocyte count of 1500, with a complete disappearance of polymorphonuclears. A septic temperature persisted for six days; the cervical glands became greatly enlarged, and ultimately suppurated and were drained. During this period a dramatic change took place in the blood. On January 1st, the white cell count was 1500 with 100% lymphocytes; on January 9th, the total white count was 55,800 with polymorphonuclears 72%.



fect. The spinal fluid cell count was 3,482. The smear and culture were positive for H. Influenzae, type B. In the upper section of this chart the dosage of sulfapyridine and sulfadiazine is shown with the method of administration and the total number of grains per pound body weight for each twenty-four hour period. It will be noted that for a period of ten days this child received two grains per pound body weight intravenously of sulfapyridine in each twenty-four hours period, and two grains per pound body weight of sulfadiazine, by mouth, a total sulfonamide intake of four grains per pound body weight per 24 hours. The blood concentration shown in the second section of this chart is interesting. On the fourth day of treatment a peak of 26.7 mg.% in the blood and 23.4 mg.% in the spinal fluid was reached. In spite of a sustained dosage of four grains per pound body weight per day the drug concentration rapidly dropped to about fifteen in the blood and ten in the spinal fluid. In the

lymphocytes 20%. On January 17th, there were 18,000 white cells with 66% polymorphonuclears, and on January 26th, the count was 8,600 white cells with 73% polymorphonuclears. This so-called leukemoid reaction is intensely interesting, and has been the subject of considerable investigation. The patient is perfectly well today, with a normal blood picture.

Patsy L. — age eight years — weight 50 pounds—developed a severe headache on February 16, 1942. There was vomiting and high fever on February 17th; on the 18th she became irrational. The important physical findings on admission were marked evidences of meningeal irritation, and a left internal squint. The child was totally irrational, and her temperature was 101 degrees. Her spinal fluid cell count was 5328; the culture was positive for *H. Influenzae* Type B. Chart III

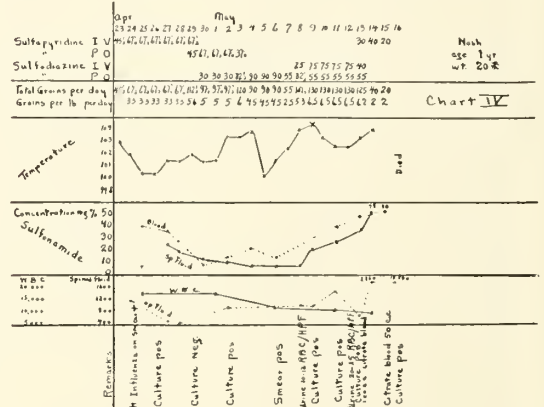


summarizes the salient features in this case. The upper section of this chart indicates the dosage. The general plan was to administer three grains per pound body weight each twenty-four hours of sulfapyridine intravenously, and the same amount of sulfadiazine orally. This schedule was not maintained in its entirety on account of vomiting. It will be noted that a very high blood concentration was obtained by the third day of treatment. A level of 35 to 40 mg. % was maintained for six days. During this period, the spinal fluid concentration varied from 12 to 18 mg. %. The spinal

fluid was sterile on the fourth day, and the cell count was below 100. It is interesting to note the sharp drop in blood concentration of the sulfonamides when sulfapyridine was omitted by vein and given by mouth. Strikingly little change in the spinal fluid concentration is noted at this time. To summarize: This child received a total of 230 grams of the drugs over a period of fifteen days. During the administration of one dose of intravenous sulfapyridine there was rather severe apnea and cyanosis; other than that no grave complications occurred which might be attributed to the drug, although the anemia was quite marked. The white blood count as indicated in the graph varied between 5000 to 15,000 with a normal differential count. This child is well today, with no complications or sequelae.

The following case is reported to show that in spite of extremely high concentrations of the drug in both blood and spinal fluid, it appears impossible at times to sterilize the spinal fluid, and death results.

Baby Nash — age one year — weight 20 pounds—was admitted to the hospital on April 23, 1942. There was a story of sudden onset twenty-four hours ago, with fever and vomiting. Convulsions occurred the morning of admission. Chart IV gives the important data



concerning this child's stay in the hospital which terminated in his death. The plan of drug administration was much the same as the two other cases already reported except that no sulfadiazine was administered for the first week. Intravenous sulfapyridine 3.3 grains per pound body weight per day gave an immediate concentration of 40 mg. % in the blood; how-

ever, in spite of the fact that this dose was maintained, the blood concentration dropped rapidly to a point below 10 mg. % at the end of one week. The spinal fluid culture remained positive. At this point, it was decided to give massive doses of sulfadiazine both by mouth and intravenously; 6.5 grains per pound body weight per day were administered with a rapid rise in blood and spinal fluid to the unprecedented peak (in our work) of 92 mg. % in the blood, and 78 mg. % in the spinal fluid. In spite of such tremendous concentrations in the blood, the spinal fluid culture was positive persistently until the day of his death. We were unable to detect any untoward effect of the drug which might have produced this death.

To summarize: Since the adoption of this intensive mode of treatment, seven patients have come under our care, and only two of these children have died. The ages of the living children were eight, five, and three years, sixteen and ten months, respectively;—the two children who died were twelve months and nine months old respectively.

Although specific influenzal serum has been disappointing in the hands of most workers, there are certain notable exceptions:

Alexander⁴ reports a total of 50 cases of influenzal meningitis treated with a combination of sulfonamide and specific rabbit antiserum with thirty-seven recoveries. She concludes that, "All sulfonamide derivatives used thus far exert a significant inhibitory effect on *H. influenzae* infections in children," and further that, "Type-specific antibody is an essential part of therapy in a number of patients (the proportion not yet known) with *H. influenzae* meningitis."

Neal reports twenty-nine cases of influenzal meningitis with fourteen recoveries. The majority of these children were treated with a combination of sulfapyridine and specific serum. However, she reports five patients who recovered in whom sulfapyridine alone was used.

A recent report by Sako, Stewart and Fleet⁵ gives excellent results in the treatment of influenzal meningitis with sulfadiazine. The drug was administered by mouth in relatively small doses, resulting in blood levels of ap-

proximately 20 mg. %, and spinal fluid concentration of 10 to 15 mg. %. Three of these patients recovered with chemotherapy alone, while two others received both serum and sulfadiazine. Two of their patients died.

Summary

The incidence of bacterial meningitis in the Henrietta Eggleston Hospital for Children in Atlanta is reported.

The age incidence and mortality rates are discussed.

The mortality rates and frequency of complications as encountered before chemotherapy are compared with the deaths and complications after the introduction of the sulfonamides.

Case reports illustrating the treatment of meningococcic and influenzal meningitis as carried out since the advent of chemotherapy are presented.

Comment

The experience in this hospital and in other clinics indicates that chemotherapy is the treatment of choice in meningococcic meningitis. Favorable reports have been published concerning the use of sulfanilamide, sulfapyridine, sulfathiazole, and sulfadiazine.

A majority of the authors up to this time express the opinion that sulfapyridine is the ideal drug, although it seems quite possible that sulfadiazine may supercede it. Our own experience has been chiefly with sulfapyridine which has been administered in doses of 2 to 4 grains per pound body weight per day. Usually, it is given intravenously in the first two or three days in order to obtain high concentration rapidly. The dose is maintained for seven to ten days after the spinal fluid is normal, then gradually omitted. Recently our experience with sulfadiazine has been most encouraging. It has many obvious advantages over sulfapyridine. It is quite likely this derivative will prove the drug of choice.

The prognosis in influenzal meningitis has been tremendously improved by chemotherapy. Most observers agree that chemotherapy offers most in the treatment of this infection, although certain authorities still believe that anti-

serum should be employed in conjunction with chemotherapy.

Our experience with large doses of sulfapyridine and sulfadiazine in combination has been favorable. We feel that high concentrations of the drug quickly obtained are important in treating this infection. To accomplish this two to three grains of sulfapyridine, per pound body weight, each twenty-four hour period, is administered intravenously at eight to twelve hour intervals; at the same time, sulfadiazine is given in the same dose by mouth. Due to the tendency of this infection to relapse, it is wise to continue medication for ten days to two weeks after the spinal fluid is normal.

Our cases reported here indicate that high concentrations of the drug—40 mg.% and above, are tolerated by the host, and may be the important factor in sterilizing the spinal fluid.

The failure to sterilize the spinal fluid of an infant with influenzal meningitis, even though the concentration in blood and spinal fluid were 92 and 78 mg.% respectively, seems to indicate varying degrees of drug resistance on the part of the organism.

Due to variations in absorption and excretion of the drugs, it appears impossible to predict concentrations in the blood accurately. Further, we have observed that it is impossible to maintain a given concentration of the drug in the blood with a given dose. There is a tendency for the concentration to drop from day to day until dosage is increased.

Recent reports indicate that sulfadiazine alone may be the drug of choice in eradicating this infection. More investigation is necessary to establish this point.

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NEWS ITEMS

Dr. Joe Crosland of Greenville and Miss Mary Howard were married recently.

Dr. Jennings Cleckley of Bamberg, a lieutenant (S. G.) in the Navy, recently was ordered to duty at sea.

Dr. William S. Bethea, who formerly practiced in Latta, is now stationed at Morris Field, Charlotte, N. C.

Dr. Ralph E. Brown, who has practiced medicine in Barnwell for the past several years, has reported to Camp Rucker, La., to begin active duty in the medical corps.

Dr. Henry Herbert, formerly of Florence, is now a Lieutenant in the Medical Corps of the United States Army and is stationed at Bainbridge, Georgia.

Dr. James C. Brabham, formerly Union County Health Officer, has been commissioned and called for service in the Medical Corps of the United States Navy.

Dr. J. F. Hair, Aiken County Health Officer for several years, has been commissioned a captain in the army and assigned to duty at Camp Blanding, Fla.

Friends of Dr. James H. McIntosh of Columbia were delighted to see a picture of his portrait in the State of Monday, August 3rd. The portrait was presented by his patients and friends to the Columbia Hospital in special exercises on August 6th.

Dr. Robert P. Walton, who is now professor of pharmacology at the University of Mississippi Medical School, has accepted the position of professor of pharmacology at the Medical College of S. C.

The Human Pyramidal Tract

VI: An Evaluation of the Pyramidal Syndrome

ARTHUR M. LASSEK, PH.D., M.D.

CHARLESTON, S. C.

The pyramidal tract, by definition consisting of all those fibers passing through the pyramids of the medulla, has long been regarded as pre-eminent in the central nervous system of man. Traditionally, it has been considered as synonymous with the "voluntary motor pathway" and lesions of it are supposed to produce a classical syndrome. The results obtained from recent experimental studies on the pyramidal system of primates ranking lower in the phylogenetic scale than man are in many respects not in harmony with those of clinical observations. These new findings are gradually being incorporated into the textbooks of clinical neurology. It is the purpose of the present article to compare the pyramidal syndrome, on the basis of fresh facts, in primates.

In evaluating the role of the pyramidal system in primates, one must necessarily take into consideration that differences exist between the members of this class. Man varies from other primates by having an erect position, by possessing a highly developed cerebral cortex and pyramidal tract and by being able to perform skilled movements. Another significant point is that man must be largely studied by the experiment of disease. The lesions which affect the central nervous system of man are not selective and they often develop slowly. In the history of human neurology, no injuries involving exactly the pyramidal tract or motor cortex are known. Therefore, other descending fibers may be affected in pathological conditions implicating the pyramidal tract of man. This is especially true of vascular accidents in the region of the internal capsule. Such destructions may mask the true role of the pyramidal system.

Before discussing the results obtained from animal experimentation, one should mention that phylogenetic studies on the pyramidal bundle have shown it to be one of the most enigmatical tracts in the central nervous system. It is found only in mammals. Mani-

fold functions have been ascribed to it. It varies considerably from specie to specie in its size, in its position in the spinal cord and in its termination. In many of the lower mammals, it has a short course ending high up, either in the lower medulla or upper cervical region of the cord. When it descends into the spinal cord, it may occupy any funiculus. In sixteen representative mammals (marsupials, rodents, chiroptera, ungulates, carnivores and primates), varying in weight from a few ounces to about 1,600 pounds, the pyramidal tract of man was found to have the largest area and fibers of both the greatest number and biggest diameter. The pyramidal tract of the monkey is about one-fourth the size, has about half as many fibers and the largest are about one-half as large as those in man. Apparently, the most constant, anatomical characteristic of this fasciculus in mammals is that it occupies the pyramids on the anterior surface of the medulla. The lower primates do offer the advantage that more circumscribed lesions can be placed at will in the motor cortex or pyramids and their effects studied. The main disadvantage of this type of research from the clinical viewpoint is in trying to interpret the results in terms applicable to man.^{1, 2, 3, 4}

Lesions involving the human pyramidal tract are conventionally thought to produce the following classical syndrome: spastic paralysis without atrophy of the muscles of the opposite side with the extremities and especially the digits affected the most, increase in the deep reflexes with clonus, loss of the superficial abdominal reflexes and the sign of Babinski. The number of pure motor cortical or pyramidal tract injuries in man are not abundant. Horsley,⁵ who removed the arm area of the motor cortex in one human case, described a hypertonia which was most marked in the muscles of the fingers and which diminished as he moved to other parts of the limb. From his descriptions and photographs, the motor area was not normal and he un-

doubtedly removed tissue of the premotor cortex outside of the Betz cell area, so that his case may be inconclusive. Walshe⁶ extirpated the leg area in one patient and subsequently found spasticity. He believes his experiment to be one in which the lesion is confined purely to the motor cortex or Betz cell area. Davison⁷ presented two cases with blockage of the anterior spinal artery, both with destruction of the pyramidal tract and neighboring structures; one of these had a contralateral flaccid paralysis. The concept of spasticity has probably been formulated mainly on the basis of lesions in the internal capsule. Many fibers other than pyramidal may be affected in such expansive injuries and the additional loss of these may be responsible for the spasticity.

The results of animal experimentation on the primates immediately below man in the phylogenetic scale are in accord in some and not in harmony in other respects from the above mentioned views on the human pyramidal tract. The numerous research papers of Fulton, Kennard and their associates at Yale University Medical School^{8, 9, 10} indicate that extirpations of the true motor cortex of such primates as chimpanzee, gibbon, baboon and monkey produce a motor deficit different than that described for man. In an imposing series, they have found that removal of this area results in flaccid paralysis. The higher the rank of the primate in their group the greater the loss of tone. In the chimpanzee, a positive Babinski reflex could be obtained following such lesions. They state that this reflex cannot be elicited below the chimpanzee in the phylogenetic scale.

Tower¹¹ studied the physiology of the pyramidal tract in the monkey by making unilateral and bilateral lesions in the pyramids. Bilateral injuries tell a more complete story because the pyramidal tract has a relatively well developed bilateral innervation. This investigation is important and represents one of the best on pyramidal function because of the location of the lesions and the thorough post-operative study. Tower found that the pyramidal tract exerted a powerful influence on

the entire voluntary and vasomotor muscles. One of the characteristic symptoms produced was pronounced hypotonic paresis which affected all the voluntary muscles with the gravest deficit being in the digits. One animal with bilateral pyramidal section exhibited a marked loss of tone resulting in sagging of the head, abdomen and tail to the ground.

The results of experimentation on primates other than man in the last decade, therefore, suggest that circumscribed lesions of the motor cortex and pyramidal tract do not produce a spastic but a flaccid type of paralysis. Whether these observations can be applied to man is somewhat speculative. In this respect, Hausman¹² in 1939, at the 65th annual meeting of the American Neurological Association presented a case of pure flaccid hemiplegia uncomplicated by sensory defect in a 26 year old man. This individual exhibited flail-like extremities (loss of tone), increase of deep reflexes, loss of the superficial abdominal reflexes and the sign of Babinski. As the patient was still alive, no autopsy report was available but Hausman believed this might be an instance of a lesion involving the pyramidal tract and nothing more. This would be in harmony with the results of animal experimentation in other primates. Walshe¹³ and Bergmark¹⁴ state that there are some instances where cortical lesions cause a flaccid paralysis but the former remains a strong champion of the view that spasticity is the result of true motor cortical lesions in man. Tower¹¹ is convinced that when all facts are considered the only sure sign of pyramidal tract involvement in man is the loss of the minute control of the skeletal muscles and that when spasticity is present it is due to extra-pyramidal destruction.

In conclusion, it can be said that some of the results of recent experimentation on primates other than man indicate that pure lesions of the motor cortex (area 4) or of the pyramidal tract (pyramids) produce a type of paralysis which is hypotonic or flaccid rather than spastic in character. These investigators believe the same syndrome would occur in circumscribed lesions of the pyramidal system of man.

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The Effects of the War on the Medical Service in 12 South Carolina Counties with Limited Medical Personnel

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The 12 counties listed on the attached tabulation had 87 active physicians in 1940 for a population of 216,225, or one active physician for every 2,485 persons. On July 1, 1942, there were 65 physicians in active practice in these counties, or one physician for every 3,121 persons.

In addition to the 65 physicians in active practice, 6 physicians from the 12 counties were in military service and 3 were awaiting call as of July 1, 1942, making a total of 74 active men who under normal conditions would be in practice in these communities. Of the 74 physicians available, 9, or 12.1 per cent, were in military service or awaiting call.

During the two-year period 1940-1942, the number of physicians in active practice in the 12 counties decreased from 87 to 65, a loss of 22 physicians, or 25.2 per cent. Of the 22 physicians lost, 9 went into military service

and 13 were removed by death, retirement, or by moving to other locations.

Of the 65 physicians left in active practice, 29 or 45 per cent are 55 years of age and over. Of the 29 men over 55 years of age, 23 are between 55 and 65 and 6 seventy years of age and over.

The 65 men left in active practice in these counties will have an average of 405 more persons dependent upon them for medical care than would have been the case had no physicians been removed for military service—3,326 persons per physician as compared with 2,921.

To provide adequate medical care, the generally accepted minimum standard is one physician for every 1,500 persons. These 12 counties now average one physician for every 3,326 persons, or more than double the minimum number of persons per physician. There are 3 counties of the 12 where the average

number of persons per physician is 5,000 or more.

A further consideration is the fact that 9 of the 12 counties listed have no hospital facilities, which places a further limitation on the physicians in these communities in providing adequate medical service.

Another factor is the fact that the average income of physicians in rural areas is low. As

a result, the compensation offered to medical officers by the Government has a tendency to draw men from these areas, especially the younger men, and no one will blame the young physician for leaving—he has an opportunity to serve his country in time of war, the compensation is better, and facilities for further training and experience are made available to him.

Counties	1942								
	1940		*In Active Practice	Popula- tion Per Physician	In Military Service		Age Groups of Active Physicians Left in Practice		
	*In Active Practice	Popula- tion Per Physician			Num- ber	% of Active Men	55-65	66-69	70 & Over
TOTAL (12 counties)	87	2,485	65	3,326	9	12.1	23	0	6
Abbeville	10	2,293	8	2,866	2	20.0	6	0	0
Allendale	7	1,863	5	2,608	**1	16.7	1	0	2
Bamberg	10	1,864	8	2,330	**1	11.1	3	0	***1
Barnwell	10	2,014	9	2,237	1	10.0	2	0	0
Berkeley	8	3,391	6	4,521	1	14.3	2	0	0
Calhoun	8	2,029	4	4,057	0	0	2	0	1
Edgefield	5	3,579	5	3,579	0	0	3	0	0
Fairfield	9	2,687	6	4,031	1	14.3	0	0	0
Hampton	8	2,183	7	2,495	1	12.5	2	0	1
Jasper	4	2,753	2	5,505	**1	33.3	0	0	1
McCormick	3	3,456	2	5,183	0	0	0	0	0
Saluda	5	3,438	3	5,730	0	0	2	0	0

*Excluding physicians in Public Health Work.

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A PALTRY FEW

Several months ago the Procurement and Assignment Committee for South Carolina furnished the Office of the Surgeon General with a list of those physicians who were considered "available for military duty." These physicians received a letter from the representative of the Surgeon General asking for an interview. During this interview each physician, if his physical qualifications were acceptable, was offered a commission. Whether to accept or reject that commission then became a matter of decision for the individual physician.

Let it be said to the credit of South Carolina that her physicians believe in responding to the call of duty, and the records speak for themselves. The percentage of men who accepted these commissions and the percentage of physicians of this state who are now serving in uniform is second to none.

But there are a few—a paltry few—who have left a black mark upon an otherwise clean escutcheon. They are all under 37 years of age, they have been declared "available for military duty," they have been offered commissions in the army of their own country—and they have refused to do aught but continue their daily work. To the call of duty, patriotism, love of country they have turned a deaf ear—and they continue on their selfish paths.

They are fighting a battle which they will inevitably lose. Their first enemy is their own

conscience which they are now trying to subdue. Their next enemy will be public opinion which will soon smite them with its wrath. And, finally, they will meet the power of the United States Government itself and this foe will be greater than their power to resist.

It is our fervent hope—and this is stated without any feeling of spite or rancor—that these men will be waited upon by Selective Service, that they will be lifted from civilian life and that they will be put in the ranks where they will be given a view of this country through the eyes of a marching private.

SCHOOL-DAYS

"School-days,

"School-days,

Dear old golden rule days.

Reading and writing and 'rithmetic

Taught to the tune of a hickory stick."

School-days are here again. Gone for another year are the freedoms of the summer months, the mornings spent in the old swimming hole, the afternoons of carefree play, the evenings of parties and picture shows. Boys and girls are now faced with the cold reality of books and classrooms and blackboards and homework.

School-days are here again and physicians will be studying this fall and winter as never before. Not in the little red-schoolhouse but in the world itself they will be learning their lessons.

They will study history as they read their

daily papers, they will receive their lessons in geography as they listen to the news, and they will brush up on their mathematics as they figure the taxes which lie ahead. But these are the minor courses. The major course will consist of those lessons which they will learn in their daily tasks.

A large number of physicians have left or will leave their accustomed paths of civilian medical practice to enter the armed forces of our nation. It is no easy task to step suddenly from the general run of a private practice or of a civilian hospital or a medical school into the routine of an army or navy hospital or into service in the field. These physicians must learn the ways of military life and of military medicine. They—who have been so independent in their own little spheres—must learn to become a cog in a great machine and to take orders from superior officers. They must learn to live without many physical comforts which have become, almost, a part of their beings. And—hardest of all—they must learn to live in a strange atmosphere among strange people without the comforting warmth and security of friends and home and family.

And those physicians who carry on their daily tasks in their own communities—they, too, must go to school. They must learn to make their hours count and their strength last for the work in the coming months will be plentiful and the laborers will be few. They must learn to deal with medical conditions beyond the confines of their immediate practice and to lend a helping hand to carry on the work of some physician who is now in service—for before this war is won the ophthalmologist may be treating the "flu" and the roentgenologist may be delivering babies. They must learn to fight, as never before, to maintain and uphold those fundamental principles of medical practice which have made American medicine what it is today. And above all, they must learn to be content with their lot, however hard the task may be, realizing full well that they can expect but little appreciation and acclaim from those they serve—for the public, being what it is, will bestow their cheers upon the men in uniform.

Yes, physicians are going to school again and the course of study which faces them is hard.

ERNEST W. CARPENTER, M. D.

1874-1942

To choose one's life work, to equip one's self well, then to be extremely busy and unusually successful—all adds up to a complete life.

Dr. Carpenter moved to Greenville in 1902. In 1905, he limited his practice to diseases of the eye, ear, nose and throat. Patients soon flocked to him from all parts of upper South Carolina. Not only his ability, but his personality, impressed itself on all those who came in contact with him. Probably no doctor in the Piedmont section of this state was better known. He enjoyed his work and was in his office or at the hospital from early morning until late at night. He seemed tireless and was just as happy when doing charity work as when attending the wealthy. For recreation, aside from golf, he enjoyed medical meetings most. He was a constant attendant at these and generally had something definite and worthwhile to say. Although, primarily interested in his specialty, he found time, through constant and extensive reading of medical journals and by mingling with doctors, to broaden and to keep up to date his knowledge of general medicine. Early in life he had done graduate work in New York, in Philadelphia, and abroad, at the clinics of London and Vienna. Perhaps because of this background, he was always on the lookout for new and better methods of diagnosis and treatment.

He enjoyed writing and contributed numerous original articles to various medical journals. He was a fellow of the American Academy of Otology and Laryngology, and of the American College of Surgeons, besides being a member of a number of other medical societies.

Some people believe that one's greatest happiness comes from family life. Dr. Carpenter and his beloved wife reared six children to whom they gave excellent educations; one of these becoming a doctor and another, a lawyer. He derived much happiness in his later years from his grandchildren.

Few men in this section have been as busy and have accumulated so large and varied a group of friends and patients. In addition to being a scientific doctor, he possessed the art of medicine. His words and manner were cheering and without professing to know psychology, he was a psychologist. His passing has left a void in the community, and in our medical society. We will greatly miss him and his contributions to our gatherings. As a man and as a doctor, he will long be remembered.

R. M. Pollitzer, M.D.

MEDICAL SUMMARIES

THE PREVALENCE OF SYPHILIS IN
SOUTH CAROLINA
(A Statistical Study)

"How much syphilis is there in South Carolina?" That question was asked during one of the discussions at the recent meeting of the South Carolina Medical Association, and no one was able to give any adequate answer.

There has just appeared a volume which gives more information on this question than has been available hitherto. Prepared by the United States Public Health Service with the cooperation of national, state, and local boards of the Selective Service System, state and local medical societies, state and local Health Departments, and the Works Projects Administration, it presents a study of the results of serological blood tests for syphilis on selective service registrants. It embraces the first million reports received during the period Nov. 1, 1940 to April 15, 1942 for registrants examined.

The report is exhaustive and should be consulted by anyone who desires detailed information. In this abstract which we are presenting, figures will be presented for the United States as a whole, general figures will be presented for certain southern states, and a detailed study will be presented for South Carolina.

	Number examined	Percentage with syphilis
U. S.	1,084,826	4.54
Alabama	17,613	8.96
Florida	17,900	17.01
Georgia	18,704	13.29
Louisiana	24,344	12.65
Mississippi	22,059	14.39
North Carolina	4,796	8.94
South Carolina	12,506	15.60
Tennessee	27,306	8.97
Texas	50,016	9.05
Virginia	22,082	8.79

TABLE 1

In Table 1 is presented the total number of men examined and the number infected with syphilis, for the United States as a whole and for the southern states.

To compare the national syphilis prevalence rate with that of any southern state without taking into consideration the large Negro population of the south is to get a distorted picture of conditions.

In Table 2 is given a detailed study of selectees and volunteers examined according to race and age groups for the U. S., for South Carolina, and for the neighboring states of North Carolina, Georgia, and Florida.

Group (Age)	U. S. (Percentage with syphilis)	Ga.	Fla.	N. C.	S. C.
Urban					
White					
21-25	1.05	2.53	2.84	1.0	3.57
26-30	2.25	5.33	5.39	4.76	5.61
31-35	4.02	8.25	8.14	6.75	9.32
Urban					
Negro					
21-25	19.81	28.32	31.74	20.22	32.14
26-30	30.07	41.48	45.69	40.17	51.92
31-35	35.95	48.58	51.37	39.71	57.85
Rural					
White					
21-25	1.05	1.78	3.28	2.01	2.41
26-30	2.09	2.74	6.85	4.16	5.36
31-35	3.40	4.82	4.24	4.46	7.48
Rural					
Negro					
21-25	17.75	18.91	28.30	15.95	18.86
26-30	27.71	31.93	42.60	26.85	32.74
31-35	34.25	38.04	51.97	33.80	46.27

TABLE 2

From a study of Table 2 it can be seen that the syphilis incidence rate among the white selectees and volunteers in South Carolina and neighboring states is slightly higher than it is over the country generally but that in no

group does it rise over 9.4% incidence. Among the negroes, however, there is a great deal higher syphilis incidence in this state and in the neighboring states than there is in the country as a whole. In four of the age groups (two in Florida and two in South Carolina) over half of the negroes examined were found to have syphilis.

In what sections of South Carolina was syphilis found to be most prevalent among registrants examined?

Table 3 gives the syphilis incidence rate for registrants by counties.

County	No. men examined	Percentage with syphilis
Abbeville	177	16.38
Aiken	482	15.15
Allendale	64	10.94
Anderson	535	9.91
Bamberg	201	17.41
Barnwell	286	19.58
Beaufort	125	22.40
Berkeley	225	16.47
Calhoun	140	12.86
Charleston	1,233	21.33
Cherokee	105	4.76
Chester	161	17.39
Chesterfield	256	14.84
Clarendon	219	8.22
Colleton	75	14.67
Darlington	255	15.29
Dillon	85	15.29
Dorchester	184	9.24
Edgefield	163	11.04
Fairfield	212	9.43
Florence	727	19.39
Georgetown	84	17.86
Greenville	729	14.27
Greenwood	103	14.56
Hampton	99	18.18
Horry	363	14.88
Jasper	50	12.0
Kershaw	40	9.09
Lancaster	159	10.06
Laurens	240	14.58
Lee	268	18.28
Lexington	283	15.55
McCormick	136	13.97

Marion	260	20.77
Marlboro	222	14.86
Newberry	159	8.81
Oconee	211	6.16
Orangeburg	263	14.45
Pickens	151	6.62
Richland	859	19.90
Saluda	75	2.67
Spartanburg	647	12.36
Sumter	392	21.68
Union	79	8.86
Williamsburg	231	11.69
York	308	15.26
County Unknown	1,628	25.60
Total	12,505	15.60

TABLE 3

The incidence of syphilis in registrants ran higher in urban than in rural populations, and Table 4 gives the incidence in cities of 5,000 or more in South Carolina.

City	No. men examined	Percentage with syphilis
Charleston	900	23.11
Columbia	591	21.49
Greenville	341	19.35
Spartanburg	176	16.48
Anderson	152	8.55
Florence	282	25.53
Greenwood	11	----
Orangeburg	35	22.86
Rock Hill	153	16.34
Sumter	191	24.61
Aiken	103	18.45
Camden	12	----
Chester	72	19.44
Clinton	14	----
Conway	119	18.49
Darlington	57	17.54
Easley	55	10.91
Gaffney	71	5.63
Georgetown	57	19.30
Hartsville	110	18.18
Laurens	89	19.10
Marion	55	27.27
Newberry	68	10.29
Union	43	9.30

TABLE 4

Conclusions

The tables and figures which have been given are concerned with selectees and volunteers for military service. These men who are examined, however, present a relatively representative cross section of the people of South Carolina and the facts regarding syphilis in these men will probably be equally evident among all of the people of the state.

Certain broad conclusions can be drawn as a result of this study.

1. The southern states including South Carolina have a higher incidence of syphilis than have the other states in the Union.

2. While the incidence of syphilis is somewhat higher among the white men of the south than it is of white men throughout the nation, it is preponderantly higher among the southern colored population.

3. With few exceptions the incidence of syphilis is higher in urban communities in the southern states and in South Carolina than it is in rural communities.

4. Syphilis has been and still is one of the greatest health problems in South Carolina.

Bibliography

Results of Serological Blood Tests for Syphilis on Selective Service Registrants.

Based on the first million reports received during the period November 1, 1940 to April 15, 1941. For registrants examined in accordance with the provisions of the Selective Training and Service Act of 1940.

United States Public Health Service.

Dr. Paul K. Switzer, Jr., formerly of Union, is now stationed at Fort Benning, Ga.

FOR SALE—the following articles from the office of the late Dr. W. A. Whitlock, Jr.: Practice of Medicine (Tice) up to date; The Cyclopedia of Medicine, Surgery and Specialties (Pierson); assorted surgical instruments including complete set tonsil instruments, microscope, otoscope, Baumanometer, glass cabinets, baby scales, platform scales and office furniture. Communicate with Mrs. W. A. Whitlock, Jr., Laurens, S. C.

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KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

CASE OF DR. ROBERT WILSON, JR. ABSTRACT NO. 462

Student K. H. Herbert (presenting):

Present Admission: 56 year old white woman admitted in January 1942, complaining of pain in right lower chest, nausea and vomiting. She was quite vague concerning her illness but apparently had felt well until the day prior to admission when she became nauseated and vomited several times. She complained of aching pain beneath the right breast where she had been injured five years ago. She developed a cough productive of brownish sputum and became dyspneic.

Previous Admissions: Was first admitted in 1932 complaining of burning on urination, frequency and palpitation. Physical examination revealed nothing unusual other than arteriosclerosis, B. P. 160/90. She returned in 1935 complaining of bilateral lumbar pain, intermittent fever and nausea. Physical examination revealed, temperature 100 degrees, tenderness over both kidney areas, dry scaly skin, thickened arteries and B. P. 138/88. There was albumin and pus in the routine urinalysis and in specimen obtained after cystoscopy, B. M. R.—11%. In 1940 she was admitted complaining of frequency, dysuria and lumbar pain. Her complaints began four days prior to admission with chill, intermittent fever and nausea. B. M. R.—17%, blood cholesterol 333 mgm., blood sugar 97 mgm. and urea n. 17 mgm. She was mentally confused but was getting along well until she began complaining of left thoracic pain and occasional nausea. She had no fever at this time but her B. P. dropped to 116/72. The thoracic pain gradually subsided. She was discharged after about three months in a greatly improved condition.

Past History: When very young she was hit on the head and for several years after that she was subject to fainting spells. Had several pelvic operations, none of any importance. Lately had noticed exertional dyspnea.

Physical Examination: Revealed a fairly well nourished and developed white woman, who appeared to be very lethargic, weak and acutely ill. T. 97.6 degrees. P. 70. R. 16. Head and neck: pupils were small and equal, reacted sluggishly. Retinal vessels were sclerotic. Ears and nose normal. No teeth. Tongue and throat dry and dirty. Thyroid not palpated. Skin: dry, cool and coarse. Glandular: no enlarged lymph nodes. Chest: normal. Respiration shallow. Lungs: slightly impaired resonance over right lower lobe. There were generalized showers

of dry, sticky rales, inspiratory and expiratory. Fremitus not altered. Cardio-vascular: the heart enlarged to the left, the P. M. I. not located. Heart sounds distant. No murmurs or thrills. Rate regular. Peripheral arteries sclerosed. B. P. 115/75. Abdomen: generally tender to deep palpation but no spasm or rigidity. No masses or organs palpated. Pelvis: nothing remarkable. Non-pitting edema of extremities, face and trunk. Reflexes: normal.

Laboratory Examination:

Urinalyses showed 3 to 4 plus albumin and from 2-5 WBC/hpf.

Blood: RBC 3,970,000, WBC 9300, Hb. 11 gm., Polys 78, Lymph. 17, Monos. 5.

Sputum: negative for TB three times. Blood sugar 125 mgm. Wassermann negative. Urea N. 19 mgm.

Hospital Course: Slightly subnormal temperature throughout hospital course. Seemed agitated and restless the entire time, complaining of pain in her shoulders and appearing to be generally uncomfortable. She complained of nausea and coughed a good deal. At times respiration was of the Cheynes-Stokes type. On third hospital day she suddenly began gasping, became cyanotic, pulse became imperceptible and she died in a few minutes.

Dr. Wilson (conducting): Mr. Klauber, suppose you start the discussion.

Student Klauber: There are so many facts presented in this case that I think the best way to discuss it is to establish some sort of theory which is supported by these facts. I believe this patient had hypothyroidism. The dry scaly skin, albumin and pus in the urine, low metabolic rate and elevated blood cholesterol all support this diagnosis. She also apparently has generalized arteriosclerosis, a condition which accompanies hypothyroidism quite frequently.

Now I believe this generalized arteriosclerosis is the principle thing in this case because the coronary arteries were involved in the arteriosclerotic process. The myocardium is known to be weakened in myx-

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edema and the sclerosis of the coronary vessels further damaged the heart muscle which was not in good condition in the beginning.

There are two possibilities as to the cause of the cardiac failure. The most probable would be coronary occlusion on the basis of an atheromatous plaque. The progressive down-hill course, the sudden fall in blood pressure and the thoracic pain are all consistent with such a sequence of events. The other possibility is that the weakened myocardium may have suddenly caused acute cardiac dilatation due to extra strain thrown upon it.

I do not think the pain beneath the right breast is of any importance; it certainly does not fit into the pathological picture. The brownish sputum and dyspnea is in keeping with the cardiac failure.

Such clinical symptoms as nausea, vomiting, chills, fever and lumbar pain together with the finding of tenderness over the kidney area on physical examination cannot be explained except on the basis of a chronic or recurrent kidney infection.

Dr. Wilson: What is the difference between hypothyroidism and myxedema?

Student Klauber: I believe they are about the same.

Dr. Wilson: Do you think they are synonymous?

Student Klauber: Yes.

Dr. Wilson: You mentioned albumin and pus in the urine as being fitting to hypothyroidism. How do you explain that?

Student Klauber: I do not know the mechanism but it is supposed to occur. I still think there is difficulty in ruling out chronic pyelonephritis.

Dr. Wilson: In substance then you think this woman had hypothyroidism, which resulted in arteriosclerosis and eventual myocardial weakness.

Student Klauber: Well, the two are commonly seen together, but that is still in the realm of the theoretical. In diseases of the thyroid there is some upset in cholesterol metabolism which results in the deposition of this material in the walls of the blood vessels, the arteriosclerosis being secondary to the myxedema.

Dr. Wilson: Your analyses then is arteriosclerosis due to the myxedema?

Student Klauber: Yes, sir.

Dr. Wilson: To what was the hypertension due?

Student Klauber: It was due to the arteriosclerosis.

Dr. Wilson: Mr. May, are hypothyroidism and myxedema synonymous?

Student May: No, sir.

Dr. Wilson: What does the word myxedema mean?

Student May: I do not know. I think she did have hypothyroidism, and possibly myxedema. The latter would certainly be suggested by the low B. M. R., dry scaly skin and non-pitting edema.

Dr. Wilson: Did the arteriosclerosis have anything to do with the myxedema or vice versa?

Student May: I think they were entirely independent.

Dr. Wilson: Mr. Edenfield, what does the word myxedema mean?

Student Edenfield: It means mucus swelling or edema.

Dr. Wilson: Do you agree with what has been said?

Student Edenfield: Yes, to a degree. We have enough evidence here to establish that the woman had hypothyroidism and at one time had pyelonephritis.

I think she very probably had coronary thrombosis and terminally she may have had infarction of the lung from a shower of emboli from the right side of the heart. It is unusual to have pain in the right side of the chest with coronary thrombosis and I suggest the pulmonary infarct as a means of explaining the pain.

Dr. Wilson: Mr. Edenfield, here are some electrocardiograms. Would you like to interpret these or would you like to have them interpreted for you?

Student Edenfield: I would rather have you read them, sir.

Dr. Wilson: Well these tracings show the changes characteristic of a coronary occlusion.

What do you think about myxedema causing albumin and pus in the urine?

Student Edenfield: Myxedema itself does not cause pus in the urine, but I think arteriosclerosis could account for the albumin. The pus must have

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been caused by the pyelonephritis.

Dr. Wilson: When I saw this patient, I thought she presented the typical picture of myxedema, and that does not simply mean hypothyroidism. In addition she had definite arteriosclerosis and a known coronary occlusion which was suggested by the clinical story and corroborated by the electrocardiograms.

Dr. Kelley: I think the question arises here as to whether or not the renal lesions are in any way connected with the myxedema. I do not quite follow Mr. Edenfield when he explains the albumin on the basis of arteriolonephrosclerosis which in turn has been suggested as being due to the changes in cholesterol metabolism. Arteriolar sclerosis is a hyaline thickening of the arterioles which is distinct from atherosclerosis.

Dr. Wilson: Dr. Johnson, what about this question of kidney findings in myxedema?

Dr. Johnson: I do not know anything about it.

Dr. Lynch: (demonstrating heart and thyroid gland)—This case is rather complicated and it is difficult to unravel the cause and effect mechanisms involved. Atrophy of the gland and thyroiditis are associated with myxedema. Thyroid glands involved in either of these processes commonly show advanced degree of arteriosclerosis of their associated arteries. Whether vascular changes alone are capable of producing such a picture it is difficult to say. The arteries to this thyroid would have to have been traced and particular note made as to whether or not the arteries that supplied this gland were sufficiently closed to explain the extreme atrophy and dissolution of the thyroid tissue that has occurred here. These tiny nubbins of greyish tissue are all that are left of the thyroid gland. Microscopic examination shows a fibrous stroma through which are scattered lymphocytes and remnants of small atrophic thyroid acini, with some foreign body giant cell reaction about small globs of colloid. There certainly must have been very little secretion coming from this gland. The vessels show an advanced degree of arteriosclerosis.

The various forms of chronic thyroiditis are poorly understood conditions. Nobody knows what they are. The present condition of this gland may have been due to one of these conditions of thyroiditis or due to sclerotic closure of the arteries.

She had advanced atherosclerosis of the coronary vessels, both main arteries being practically completely closed. It is very remarkable that she lived as long as she did, as there is as much fibrous tissue in this heart as you are ever likely to see. There is also some more recent necrosis of muscle.

The kidneys show no evidence of arteriolonephrosclerosis and only the minor changes that we are accustomed to see with closure of the larger vessels of the kidneys. There is no relic of the pyelonephritis that she must have had on previous admissions.

She was also almost certainly mentally deranged as she advanced cerebral arteriosclerosis and multiple small foci of encephalomalacia scattered through the brain.

Dr. George R. Laub has opened an office in Camden, S. C. for the practice of eye, ear, nose, and throat. Dr. Laub was rejected from the military forces for physical reasons.

Friends of Dr. F. L. Carpenter of Latta, S. C., will be interested to learn that his son, F. L. Carpenter, Jr., is a captain in the Medical Corps and has sailed for foreign duty.

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A detailed account is given of the life and work of such men as Carlos Finlay of Cuba, Reed of Virginia, Gorgas of Alabama, Deeks of Canada, Noguchi of Japan. Shorter accounts are given of other men, men who are less known but who nevertheless played a great part in the fight against disease in South America.

But more than this, there are presentations of the various diseases which have scourged tropical mankind and the effect which they have had on the private lives of individuals and on the course of communities and nations. No one can read this volume without realizing that economic or social advancement in the tropics can only be made in common with advancement in the medical welfare of the people.

At this time when our eyes are looking beyond the borders of our own country as never before, this book has a special appeal and should enjoy a wide circulation among physicians.

ADVANCES IN INTERNAL MEDICINE VOL. 1

Editor—J. Murray Steele, New York

Associate Editors—William Dock, New York; Tinsley R. Harrison, Winston Salem; Chester S. Keefer, Boston; Robert F. Loeb, New York; Warfield T. Longcope, Baltimore; George R. Minot, Boston; I. Snapper, Peiping.

Interscience Publishers, Inc., New York. \$4.50

The purpose of this book as expressed in the preface, is to put into concrete form "the notion that a distinct need exists in the broad field of internal medicine for an informal summary, from time to time, of progress in those fields in which progress has recently occurred."

The articles are written by men who have made contributions to the advances which are under discussion and in this volume the following subjects are presented: The Use of the Miller-Abott Tube

in the Diagnosis and Treatment of Disorders of the Gastro-Intestinal Tract; The Use of Insulin and Protamine Insulin in the Treatment of Diabetes; Sympathetic Nervous Control of the Peripheral Vascular System; The Antibacterial Action of the Sulfonamide Drugs; The Choice of the Sulfonamides in the Treatment of Infection; Infections of the Urinary Tract; Present Trends in the Study of Epidemic Influenza; Hypertension—A Review of Humoral Pathogenesis and Clinical Treatment; Nephrosis; Riboflavin Deficiency.

The articles are readable, authoritative, and up-to-the-minute. Each is followed by a full bibliography. The only criticism which this reviewer has to make is that occasionally the writers become a little too technical and enter into too much detail—but this fault might be the redeeming feature for others who peruse the pages.

For the physician who is interested in what is new in internal medicine, this volume will bring him the answer in certain fields.

THE KENNY METHOD OF TREATMENT FOR INFANTILE PARALYSIS. 1942.

By Wallace P. Cole, Professor of Surgery; John F. Pohl, Clinical Instructor of Orthopedic Surgery, and Miland E. Knapp, Clinical Asst. Professor of Radiology. All from the University of Minnesota. New York City, National Foundation for Infantile Paralysis.

This is publication No. 40 of the National Foundation for Infantile Paralysis and simply describes Miss Kenny's technique of treatment in the acute stages of infantile paralysis. First developed in Australia, her methods have become outstandingly successful in America. Results have shown that her treatment has lessened the crippling deformities that so often follow this disease. No physician who treats infantile paralysis can afford to be without this knowledge and this small pamphlet (46 p.) is an excellent place to obtain it since it sums up the Kenny treatment clearly and succinctly.

Dr. Robert J. Black of Ruffin, S. C., has entered the service of the armed forces.

Dr. E. T. Kelley of Kingstree applied for a captain's commission in the U. S. Army but was given a major's commission instead. He will report for duty as soon as he is called.

DEATHS

Dr. Lee Jackson Wall, 84, died at his home in Easley on August 6. Dr. Wall, a graduate of Vanderbilt Medical School in 1891, practiced medicine for twenty-five years in Easley but was forced to retire from active practice five years ago. He was an Honorary Member of the South Carolina Medical Association. He is survived by his wife, one son and one daughter.

Dr. James Andrew Quinn, 25, died at his home in York on August 2nd. During his medical school career he developed the disease which led to his death but refused to give up and continued his studies. His final examinations were taken by him while in a hospital bed and only one month before his death he passed the State Board medical examination.

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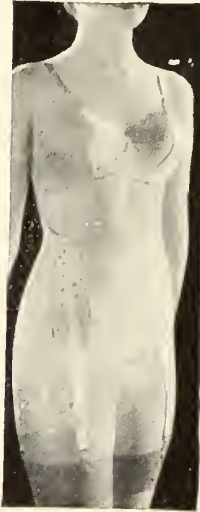
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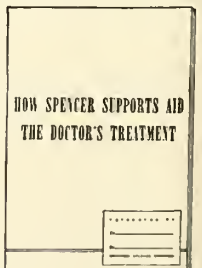
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THE JOURNAL

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Fatal Toxic Sulfonamide Drug Reactions

WILLIAM H. KELLEY, M.D.

and

M. W. COLGIN, M.D.

CHARLESTON, S. C.

Sulfonamide drugs have fortunately proved relatively safe in general use. Although untoward side effects of one type or another are observed in the majority receiving these preparations, few are of serious consequence and according to the literature they have seldom led to death. None the less from the preventive medical viewpoint, fatalities attributed to these drugs though infrequent are of considerable interest. Furthermore, there is reason to believe that these toxic drug reactions act as contributory causes of death more often than is generally appreciated. Sutliff¹ recently collected 25 examples that occurred in New York City during the year 1941. It is proposed in this paper to report 6 additional fatalities from the files of the Roper Hospital, due in some measure to sulfonamide drug toxicity. Advantage will also be taken of this opportunity to present for review certain data from other previously recorded deaths from this cause.

In general the most dangerous of the toxic sulfonamide drug reactions are those affecting the blood or hematopoietic system and the kidneys. Of the recorded cases, nearly all have been ascribed either to agranulocytosis, acute hemolytic anemia, or so-called "renal crystallosis" in the order of frequency given. Besides these, Long² cited a case of fatal rectal hemorrhage during sulfanilamide therapy, presumably related to the drug. Also, though cases are lacking, the hazards of purpura

hemorrhagica associated with sulfonamide therapy are evident. Finally Lederer and Rosenblatt³ and Merkel and Crawford⁴ have recently described areas of necrosis in the kidneys, liver, lungs, bone marrow and spleen of 5 cases that died in the course of sulfathiazole therapy—findings as yet not generally confirmed.

Agranulocytosis, the most frequently fatal of the toxic drug reactions, is usually a complication of the second or a later week of sulfonamide therapy, as shown in Table No. 1. It has occurred more often with the use of sulfanilamide than that of its derivatives, but withal is quite uncommon. The clinical manifestations and therapeutic indications are similar to those of agranulocytosis developing under other conditions. In prophylaxis, it is necessary to count the leukocytes at least on alternate days, especially during the period of greatest susceptibility, and to discontinue therapy with the appearance of leukopenia and granulocytopenia. In this connection it is well to bear in mind that changes in the bone marrow may be in advance of those to be observed in the blood by days.

At the Roper Hospital, acute hemolytic anemia has been the cause of the largest number of deaths from sulfonamide drugs. Although uncommon with either, this complication also results more often with the use of sulfanilamide than with that of its derivatives.

Table No. 1

FATAL GRANULOCYTOPENIA

Bibliography	Race, Sex & Age	Amount & Duration of Therapy	Leukocytes	Diagnosis
<i>Sulfanilamide</i>				
<i>Plummer, H. E.</i> : New Eng. J. Med. 216:711, '37	W. F. 54 yrs.	Daily dose 33 days	Wbc = 400 No PMN	Streptococcus viridans endocarditis
<i>Bornstein, S. S.</i> : J. Pediat. 11:198, '37	C. F. 6 mos.	16+ gms. 4 weeks	Wbc = ? No PMN	Erysipelas, broncho-pneumonia, otitis media
<i>Oconnell, J. T.</i> : U. S. Navy Med. Bull. 36:61, '38	Youth	25 gms. 7 days	Wbc = 650 No PMN	Chronic gonorrhea
<i>Stewart, W. F. et al.</i> : J. A. M. A. 110:368, '38	W. M. 32 yrs.	56 gms. 21 days	Wbc = 800 No PMN	Penile ulcer (chancroidal?)
<i>Berg, S. & Holtzman, M.</i> : J. A. M. A. 110:370, '38	W. M. 22 yrs.	38 gms. 16 days	Wbc = 1 600 No PMN	Gonorrhea
<i>Scheckett, H. T. & Price, A. B.</i> : J. A. M. A. 112:823, '39	W. M. 45 yrs.	64 gms. 15 days	Wbc = 50 PMN = 1 %	Post operative pneumonia
<i>Corr, P. & Root, R. N.</i> : J. A. M. A. 112:1939, '39	W. M. 22 yrs.	35 gms. 15 days	Wbc = 800 PMN = 10 %	Leukorrhea (cause?)
<i>Sailer, S.</i> : Am. J. Clin. Path. 9:269, '39	W. M. 39 yrs.	282 gms. 23 days	Wbc = 200 No PMN	Streptococcus viridans endocarditis
<i>Tragerman, L. I. & Goto, J. M.</i> : J. Lab. & Clin. Med. 25:1163, '39-40	(1) W. M. 15 yrs.	100 gms. 18 days	Wbc = 550 No PMN	Scarletinal rash
	(2) W. M. 53 yrs.	64 gms. 3 weeks	Wbc = 550 No PMN	Sore throat (streptococcal?)
	(3) W. M. 53 yrs.	88.5 gms. 21 days	Wbc = 1,100 PMN = 22 %	Streptococcus viridans Endocarditis
<i>Sulfapyridine</i>				
<i>Rosenthal & Vogel</i> : J. A. M. A. 113:584, '39	(1) C. M. 10 yrs.	95 gms. 15 days	Wbc = 700 No PMN	Staphylococcus osteomyelitis
	(2) C. F. 4 yrs.	40 gms. (?) 16 days	Wbc = 2,000 PMN = 4 %	Pertussis and Pneumococcus Type VI pneumonia
<i>Sulfathiazole</i>				
<i>Kennedy, C. P. & Finland, M.</i> : J. A. M. A. 116:295, '41	W. F. 38 yrs.	Daily dose 28 days	Wbc = 1,200 No PMN	Streptococcus viridans endocarditis
<i>Hoynes, A. L. & Larrimore, G. W.</i> : J. A. M. A. 117:1353, '41	W. M. 34 yrs.	100 gms. (?) 2 months	Wbc = 200 "Occasional granulocyte"	Phobia of venereal disease

Table No. 2
ACUTE HEMOLYTIC ANEMIA

Bibliography	Race, Sex & Age	Amount & Duration of Therapy	Before Hbg	Before Rbc	After Hbg	After Rbc	Icterus Index units	Blood Urea mgm%	Comment
Sulfanilamide									
Wood, H.: South Med. J. 31:643, '38	C. M. 28 yrs.	20 gms. 2nd day	13.5 gm. %	4.52 mil.	3.5 gm. %	1.13 mil.	?	?	Hemolytic streptococcal pneumonia with bacteremia. Hemoglobinuria, jaundice, oliguria, albuminuria. Coma. Died 13th day from start of treatment.
Koletsky, S.: J. A. M. A. 113:191, '39	C. F. 64 yrs.	8 gms. 2nd day	85% Sahli	3.04 mil.	38% Sahli	1.60 mil.	18	?	Pneumococcus Type III mastoiditis. Mastoidectomy. Died in coma 6th day from start of therapy.
Tragerman, F. J. & Goto, J. M.: J. Lab. & Clin. Med. 25: 1163, '40	W. M. 51 yrs.	25 gms. 3rd day	144% Sahli	4.42 mil.	42% Sahli	1.75 mil.	80	?	Erysipelas. Hemoglobinemia, hemoglobinuria, convulsions, coma. Died 25th day from start of therapy.
Roper Hospital Case No. 31669	W. M. 43 yrs.	4 gms. 2nd day	14.0 gm. %	?	6.0 gm. %	1.86 mil.	80	138	Elective appendectomy and hemorrhoidectomy. Hemoglobinemia, hemoglobinuria, jaundice, anuria, edema, coma. Died 15th day from start of therapy.
Roper Hospital Case No. 116755	C. M. 32 yrs.	4 gms. 2 days (?)	?	?	14.0 gm. %	2.20 mil.	?	372	Paratyphoid fever. Treated at home. Dark urine. Coma. Autopsy: chronic focal pyelonephritis; hemoglobin casts obstructing tubules of both kidneys.
Roper Hospital Case No. 7576	C. M. 30 yrs.	15 gms. 4th day	?	?	6.0 gm. %	1.50 mil.	6	134	Fever of undetermined origin. Home treatment. Black urine. Coma. Autopsy: parenchymatous degeneration of the kidneys; widespread hemoglobin casts and tubular nephritis.
Sulfanilamide and Sulfapyridine									
Fox, C. L. & Otten- berg, R.: J. Clin. Inv. 20:593, '41	(1) W. M. 39 yrs.	Sulfan. "few doses"— Sulfapyr. 11 gm., 2 days	80%	?	40%	?	?	69	Infection at tip of nose. Hemoglobinemia, hemoglobinuria, jaundice, oliguria, coma. Died 5th day from start of therapy.
	(2) W. M. 63 yrs.	Sulfan. 5 gm. Sulfapyr. 12 gm., 3 days	?	?	50%	1.00 mil.	?	42	Bronchopneumonia. Hemoglobinemia, hemoglobinuria, jaundice, oliguria. Died 5th day from start of therapy.
Sulfapyridine									
Ravid, J. M. & Chesner, C.: Am. J. Med. Sc. 199:380, '40	W. M. 79 yrs.	8 gms. 3 days	80%	4.00 mil.	58%	2.75 mil.	30.5	222	Partial intestinal obstruction. Pneumonia. Hemoglobinuria, jaundice, anuria, coma. Died 6th day from start of therapy.

Counting the case reported by Wood⁵ there have been in all 4 deaths from this cause—all due to sulfanilamide—in our series. In contradistinction to agranulocytosis, acute hemolytic anemia almost always develops during the first 5 days of therapy and in our experience during the initial course of sulfonamide therapy only. The mechanism of the reaction is as yet unknown beyond the fact that under the influence of these drugs massive extracellular hemolysis occurs. The onset may vary in character but in our cases has been rather dramatic. The patient usually experiences headache, fever, malaise, and great weakness. Within 24 hours discoloration of the urine and jaundice appear. The hemolysis, judged from the degree of hemoglobinuria, may become critical within the same period. In surviving cases 4-5 days are required before the signs of blood destruction are cleared.

Death from the acute hemolysis may occur in the early stages from shock as in the case of acute blood loss, or later from renal failure, analagous to that which occurs with hemoglobinuria from other causes (mismatched blood transfusion, malaria, arsene poisoning, etc.) In the presence of strongly acid urine the hemoglobin tends to coagulate, producing obstructive casts, in its passage through the renal tubules. When widespread in the kidneys this process may result in oliguria or anuria with azotemia.

The treatment is that for massive hemolysis in general. Sulfonamide therapy is to be discontinued at once and measures taken to hasten elimination of the responsible drug. Alkali in generous amounts should be administered to modify the urine reaction. It is theoretically advisable not to employ potassium salts for this purpose, since potentially toxic amounts of this substance are liberated in the circulation from the lysed erythrocytes. The transfusion of whole blood is usually in order. As in the instance of agranulocytosis, the greatest success in combatting this reaction lies in suitable prophylaxis. Daily determinations of the hemoglobin and red cell content of the blood during the first week of therapy and observation of all urine samples for red

discoloration provide a means of anticipating this complication with gratifying regularity. Sudden decreases in the numbers of erythrocytes and hemoglobin value, if checked, and hemoglobinuria are of course urgent indications for omitting sulfonamide therapy. Besides this we also give sodium bicarbonate along with these drugs in order to decrease the hydrogen ion concentration of the urine during the period when massive hemolysis is likely to occur.

So-called "renal crystallosis" is an unusual complication of therapy with sulfapyridine, sulfathiazole or sulfadiazine. The incidence seems greater in the elderly and in those with antecedent impairment of renal function. The difficulty appears to be physico-chemical in nature and related to the low aqueous solubility of the drugs. Under certain conditions, resorption of fluid, etc., from the glomerular filtrate leads to crystallization of the conjugated or acetyl derivatives of the drugs in the renal tubules. Aggregation of the crystals, together with the related local tissue reaction results in blocking of the urinary passages either at the tubules or beyond in the renal pelves or ureters. The usual clinical manifestations are crystalluria, hematuria, oliguria or anuria with azotemia, and if concretions develop in the renal pelves, renal colick. It appears from the cases shown in Table No. 3 that "renal crystallosis" rarely if ever proves fatal per primum, but may act as an important contributory cause of death in patients already seriously ill with other diseases.

In management, withdrawal of the responsible drug and increase of the fluid intake are the first indications. Irrigation of the renal pelves by urological methods is advocated in cases with renal colick or prolonged oliguria. Failing this, nephrostomy may prove necessary. In prophylaxis, it seems wise to maintain a urinary output of at least 1500 cc. daily. The administering of sodium bicarbonate along with the sulfonamide drugs is theoretically advisable but of uncertain effectiveness. Close observation of the urine and omission of the therapy upon the appearance of hematuria are sometimes helpful in anticipating this complication.

Table No. 3
"RENAL CRYSTALLOSIS"

Bibliography	Race Sex Age	Day of Therapy Symptoms Appeared	Total Dose	Comment
Sulfapyridine				
Smith, F. J. & Needles, R. J.: Am. J. Med. Sc. 198:19, '39	W. F. 55 yrs.	3rd	9 gms. Bl. conc. = ?	Type III Pneumonia. Anuria for 2 days. Blood NPN = 56.4 mgs.%. Spread of lung lesion. Died 11th day of therapy. Autopsy: Parenchymatous degeneration of the convoluted renal tubules.
Sadusk, J. F., Jr. et al: J. A. M. A. 115:1968, '40	W. M. 35 yrs.	4th	29 gms. Bl. conc. = 3.3 mg%	Infected traumatic wound of head. Hematuria, anuria; blood NPN = 76 mgs.%. Autopsy: Granular material in renal tubules.
Sulfathiazole				
Pepper, D. S. & Horack, H. M.: Am. J. Med. Sc. 199:674, '40	W. F. 77 yrs.	4th	24 gms. Bl. conc. = 7.2 mg%	Type III Pneumonia. Arteriosclerosis. Oliguria. Died 10th day from start of therapy. Autopsy: Hemorrhagic pancreatitis. Focal pyelonephritis. Nephrosclerosis. Tubules blocked by crystalline concretions with proximal dilation.
Winsor, T. & Burch, G. E.: J. A. M. A. 118:1347, '42	(1) C. F. 37 yrs.	3rd	21 gms. Bl. conc. = 21 mg%	Purulent pericarditis. Oliguria. Blood urea N = 101 mgs.%. Autopsy: Dilatation of renal tubules, many of which contained amorphous material. Lymphocytic infiltration of cortex.
	(2) C. F. 36 yrs.	3rd	10 gms. Bl. conc. = ?	Pelvic inflammatory disease; hematuria; oliguria; blood NPN = 38 mgs.%. Autopsy: amorphous matter filling many of renal tubules which were dilated. Urolith formation.
	(3) C. F. 47 yrs.	13th	62 gms. Bl. conc. = 8 mg%	Bronchopneumonia. Congestive heart failure. Hematuria; oliguria; blood NPN = 60 mgs.%. Autopsy: Granular deposits in renal tubules.
Roper Hospital Case No. 1 No. 113737	W. M. 68 yrs.	3rd	22 gm. Bl. conc. = 9.6 mg%	Strangulated hernia; general peritonitis; Wangersteen ileal drainage. Oliguria. Azotemia. Autopsy: Intestinal perforation; obstruction by crystalline deposits with proximal dilation of renal tubules. Arteriolonephrosclerosis.
Roper Hospital Case No. 2 No. 2183	C. M. 54 yrs.	7th(?)	70 gm. Bl. conc. = 12 mg%	Carcinoma of esophagus; malnutrition. Gastrectomy. Esophagectomy. Uremia. Died 3 weeks from start of therapy. Autopsy: Carcinoma of esophagus. Obstruction with proximal dilation of renal tubules by crystalline deposits.
Sulfathiazole and Sulfadiazine				
Roper Hospital Case No. 3 No. 3519	W. F. 3 yrs.	10-14 (?)	10 gm. s-d 6 gm. s-t Bl. conc. = 25 mg%	Cellulitis of leg; hemolytic staphylococcus septicemia; coma. Died 7th day of therapy. Autopsy: Hydroptic tubular degeneration of the kidneys (sulfonamide). Chronic pyelonephritis.
Sulfadiazine				
Bradford, H. A. & Schaffer, J. H.: J. A. M. A. 119:316, '42	W. M. 64 yrs.	9th	50.5 gm. Bl. conc. = 5-14 mg%	Type III Pneumococcal pneumonia. chemotherapy — interrupted. Oliguria. Blood NPN reached 131 mgs.%. Autopsy: Crystalline deposits in renal pelvis and tubules. Tubular epithelial degeneration.
Raines, S. L.: J. A. M. A. 119:496, '42	W. M. 69 yrs.	8rd	18 gm. Bl. conc. = ?	Lung abscess. Chemotherapy. Hematuria; anuria. Blood NPN = 84 mgs.%. Died 11th day of therapy. No autopsy.

Discussion

The data at hand are insufficient to portray the mortality from the sulfonamide drugs in general use. In the studies published on the use of sulfonamide drugs in certain infectious diseases, such as lobar pneumonia, in which all prophylactic measures against drug intoxication were presumably taken, literally thousands of consecutive cases have been treated without death from the therapy. In corollary, it appears that fatal toxic sulfonamide drug reactions have occurred usually in cases in which the chemotherapy was administered without systematic supervision. These circumstances suggest that when due precautions are taken the mortality from these drugs is largely avoidable.

The most important precautionary measures against the dangerous toxic drug reactions during sulfonamide therapy presently appear to be: a. During the second and later weeks of prolonged sulfonamide therapy, leukocyte counts and when indicated differential blood counts should be carried out at least on alternate days. The appearance of granulocytopenia is probably of serious import.

b. Daily measurements of the hemoglobin and erythrocyte content of the blood should be made during the first week of therapy, particularly in those taking sulfonamide drugs for the first time. Decreases in values of more than 10 percent, when confirmed by re-examination, are indications for withdrawing therapy.

c. All urine passed during the first 5 days of therapy should be inspected grossly for discoloration from hemoglobinuria or hematuria. Urinalysis for blood or hemoglobin should be done 2-3 times weekly. Hemoglobinuria heralds acute hemolytic anemia. Hematuria may foretell "renal crystallosis."

d. Daily observation of the patient for clinical signs of drug intoxication is required.

The data from cases of fatal toxic drug reactions suggest further that the selection of cases is a matter of importance in the safe use of sulfonamide therapy. In the first place appropriate sulfonamide drugs should be employed without hesitation to combat all serious infectious disease in which they are known to be of distinct therapeutic value. When possible

all reasonable precautions against drug toxicity should be employed, but in all cases the patient should be given the advantages of the treatment, regardless of the available clinical facilities. In the second place, sulfonamide therapy probably should not be employed in minor infectious processes, or those in which evidence of its value is lacking, or as a therapeutic test in obscure fevers, unless under strict precautions. Also, sulfonamide drugs should be given only with the greatest care, if at all, to those who have previously manifested dangerous toxic reactions with their use.

Finally, it would appear wise to avoid the use of sulfanilamide when other compounds may be used with equal promise.

Acute Hemolytic Anemia

Report of Case No. 31669: A Jewish salesman of 43 years entered December 17, 1939, with a complaint of vague recurrent lower right quadrant pain for 3-4 months and bleeding hemorrhoids off and on for 3-4 years. The physical examination confirmed the presence of internal hemorrhoids. Accessory clinical examinations showed the blood picture and urine to be normal.

On the second day an elective appendectomy and hemorrhoidectomy were performed uneventfully. Difficulty with voiding necessitated catheterization on the first and second post-operative day. On the sixth post-operative day the temperature rose to 102° F. and the urine showed from 30-40 w. b. c. per h. p. f. Sulfanilamide in 1 gm. doses at 4-hour intervals was begun at once. Nausea supervened and when a total of 4 gms. was taken, the drug was omitted. At this time the blood contained 13.0 gm. percent of hemoglobin. On the following evening, December 26, the urine showed a reddish tint and on the next day, pallor and jaundice were first noted.

When seen in medical consultation on December 29, he appeared gravely ill, stuporous, and deeply jaundiced. Temperature, 106° F.; pulse, 140; respiration, 35; blood pressure, 110/68. The urinary output for the preceding 24 hours had been 210 cc. The accessory clinical findings revealed the presence of hemoglobinemia, hemoglobinuria (2.25 gm.%) and an icterus index of 80 with an indirect van den Bergh reaction. The blood showed a total hemoglobin of 6.0 gm. percent; r. b. c., 1.86 million; w. b. c., 30,000 with 73 percent PMN. The blood urea on the next day was found to be 74 mg. percent. The Wasserman reaction and repeated smears for malaria were negative.

The subsequent course led progressively to death from renal failure. The hemoglobinemia and hemoglobinuria were almost completely cleared within 4 days from the start. The urine output continued

at less than 200 cc. daily, and the specific gravity at 1.010-1.012. Anasarca developed and the blood urea increased to 138 mg. percent on the day of death, January 8, 1940. No autopsy.

Report of Case No. 116755: A colored laborer of 32 years was first seen in the Out Patient Department on April 14, 1940, complaining of fever, headache, sorethroat and abdominal pain of 6 days duration. There were signs of septic sorethroat and in treatment sulfanilamide 0.6 gms. every 4 hours for 3-4 days was prescribed for use at home. He was next seen upon admission to the medical ward April 26, twelve days later. From members of his household it was learned that he had taken the sulfanilamide irregularly in an unknown total amount estimated at 10-15 gms. On April 20 he developed high fever, became irrational and passed dark red urine that stained the bed linen brown. From that time the fever and mental confusion had persisted. He appeared stuporous, markedly dehydrated and in extremis. Temperature, 101° F.; pulse, 130; respiration, 32; blood pressure, 70/35. There was no jaundice. The blood contained 13.0 gms. of hemoglobin; w. b. c., 19,100 with 83 percent PMN cells. A blood culture was positive for *E. paratyphosus B*. The blood Wasserman reaction and smears for malaria were negative. The blood urea nitrogen was 373 mgs. percent. The small amount of urine obtained showed a trace of albumin and a specific gravity of 1.012.

With supportive measures in the hospital he failed to rally and died on the following day, April 27.

The autopsy disclosed of the kidneys, the usual gross and histologic changes of a low grade chronic pyelonephritis and in addition hemoglobin casts producing widespread obstruction of the renal tubules. In the gastro-intestinal tract and spleen the findings were compatible with *E. paratyphoid* infection. There was also evidence of coronary artery sclerosis with miliary areas of myocardial degeneration and a recent lobular pneumonia of both lungs.

Report of Case No. 7576: A negro laborer of 30 years entered on April 17, 1942, complaining of fever of 1 month and discoloration of the urine for 1 day. The onset was with fever and vague low abdominal pain, which had confined him to bed continuously. During the 5 days preceding entry, he had taken 0.6 gm. of sulfanilamide at 4-hour intervals for a total of approximately 14 gms., without relief. On the day before entry his fever had increased and the urine took on a dark red color. Temperature, 101.5° F.; pulse, 112; respiration, 28; blood pressure, 140/75. He appeared mentally clouded and acutely ill. The sclerae were deeply icteric. The blood showed a total hemoglobin of 6.0 gms., r. b. c., 1.92 million; w. b. c., 11,050 with 62 percent PMN cells. The blood Wasserman reaction and smears for malaria were negative. There was a gross hemoglobinemia. The urine contained

1.25 gms. percent of free hemoglobin. The blood urea nitrogen was 127 mgs. percent.

In the hospital the fever persisted at a level of 100-102° F. By the end of 4 days the hemoglobinemia, hemoglobinuria, and the jaundice were practically cleared. Although the urine output was 2-3 liters daily, the urine specific gravity was fixed at 1.010 and the blood urea nitrogen gradually increased to 157 mgs. percent during the first week of entry. On April 29, the twelfth hospital day, he died with a blood urea nitrogen of 112 mg. percent and the usual signs of uremia.

At autopsy the pathological changes of interest were limited to the kidneys, which showed widespread degeneration of the parenchymatous elements with hemoglobin casts producing widespread obstruction of the renal tubules.

Renal Crystallosis

Report of Case No. 113737: A white laborer of 68 years was admitted on the surgical service November 23, 1940, with bilateral hernia in the inguinal regions, with symptoms of strangulation of the left over a period of 24 hours. On examination he appeared acutely ill with signs of marked peritoneal irritation. Temperature, 99; pulse, 100 respiration, 20; blood pressure, 196/132. The heart was moderately enlarged to the left and downward and the arteries were thickened. The accessory clinical findings of the blood showed 5,300 w. b. c. with 72 percent PMN cells and normal hemoglobin. The electrocardiogram disclosed evidence of myocardial damage with intraventricular conduction block.

At emergency operation a perforation of the lower ileum with generalized peritonitis was found. An ileostomy was established and the wound drained, while with supportive measures the general condition of the patient seemed to improve. Among the post-operative measures, sulfathiazole in amount of 22 gms. was administered over a 4-day period through a Wangenstein drainage tube. The condition of the patient appeared favorable until the third hospital day when it was observed that the urine was scant and contained some 300 r. b. c. per h. p. f. On the following day the blood urea was 91 mgs. percent. Upon discontinuance of sulfathiazole therapy the fever returned. On the ninth post-operative day the wound broke open and discharged a large amount of pus and fecal matter. The blood urea decreased to 70 mgs. percent. The general condition rapidly declined and he expired on December 5, 1940, 12 days after entry.

Autopsy revealed perforation of the jejunum with general peritonitis from strangulated interstitial inguinal hernia. Of the kidneys, there were signs of chronic pyelonephritis. The renal tubules contained widespread obstructing casts apparently made up of albuminous material, hemoglobin, and crystalline concretions. Above the sites of obstruction many of the tubules were dilated to give a cystic appearance.

Fluid from these cysts was found to contain 10.6 mgms. percent of sulfathiazole.

Report of Case No. 2183: A 54 year old negro laborer was admitted on October 2, 1941, with the complaint of dysphagia, cough and fever of 3-4 days duration. Physical and X-ray examination revealed a confluent area of consolidation of the left lower lobe. Temperature, 102° F.; pulse, 120; respiration, 36; blood pressure, 150/90. The sputum showed no specific type pneumococci. The accessory clinical examinations showed 12 gms. percent of hemoglobin; r. b. c., 4.34 million; w. b. c., 15,250 with 83 percent PMN. The blood Wasserman was four plus positive.

A diagnosis of pneumonitis of undetermined etiology was made. Sulfathiazole therapy was administered with marked improvement following within 48 hours. Upon subsidence of the pulmonary infection, the dysphagia persisted. On October 6, four days after entry, fluoroscopic examination of the esophagus with barium disclosed a constriction of the lower middle third with slight dilation above. This was interpreted as carcinoma of the esophagus. Esophagoscopy failed to produce tissue for pathological examination.

Three weeks after entry a gastrostomy was made. After preliminary X-ray therapy the involved portion of the esophagus was resected (by the surgical staff) on December 22. Following operation sulfathiazole in full dosage was given as a prophylactic measure. Although the operative wound remained clean, the patient pursued a downhill course without evident cause. There was a progressing febrile cachexia which culminated in coma. No accessory clinical studies were made but it was noted that his face was covered with a urea frost upon the day of death, December 25, 1941.

Pathological examination confirmed the clinical impression of carcinoma of the esophagus. Post mortem examination disclosed no abnormalities of note except in the kidneys. Here many of the renal tubules contained crystals characteristic in morphologic appearance with those seen in "renal cry-

stallosis" following sulfonamide therapy. In addition there were signs of benign nephrosclerosis with hyalinization of some glomeruli.

Report of Case No. 3519: A 3-year old white child entered on the pediatric service November 23, 1941, with fever and vomiting of 1 day duration. Temperature, 105° F.; pulse, 150; respiration, 24. Physical examination revealed marked pallor and a sprinkling of petechiae over the chest and abdomen, and upon the mucous membranes. There was a generalized soft lymph node enlargement. The liver and spleen were readily palpable. There was a small area of inflammation of the skin over the left ankle. The accessory findings showed of the blood: Hemoglobin, 7.5 gms.; w. b. c., 21,600. The urine was normal.

The course in the hospital was progressively downhill. On the day after entry the w. b. c. count dropped to 2,750 with only 7 percent PMN. On each of the next 2 days blood cultures were positive for hemolytic staphylococcus aureus. The lesion on the ankle spread and cultures showed the same bacterium. Signs of pneumonia appeared on the fourth day after entry. Sulfathiazole and later sulfadiazine in full doses were given from the start. In addition staphylococcus anti-toxin, frequent blood transfusions and pentnucleotide were employed. The general condition declined steadily and she died on December 1, 1941.

Autopsy revealed gangrenous cellulitis of the leg with hemolytic staphylococcus aureus septicemia. Of the kidneys there were signs of chronic pyelonephritis and hydropic tubular degeneration, probably related to sulfonamide therapy.

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2. Long: J. A. M. A. 115:364, 1940.
3. Lederrer and Rosenblatt, Ibid, 119:8, 1942.
4. Merkel and Crawford: Ibid, 119:770, 1942.
5. See Table No. 2.

Case Report

Acute Mastoiditis Combined With Other Infections in a Premature Infant

R. W. HANCKEL, M.D.

CHARLESTON, S. C.

This case is presented as being of interest because of the serious nature of the infections which beset the patient at an early age, the necessity for two major operations, one a simple mastoidectomy at thirty-one days of age and the other an ileostomy at sixty days of age, and her subsequent prompt recovery from each.

The patient was on the pediatrics service and was seen in consultation by the author in conjunction with consultants from the surgical service.

Report of a Case

Baby S. M. E., a colored female, admitted to the nursery at Roper Hospital November 11, 1941, within an hour after a spontaneous delivery in the home with a diagnosis of prematurity. On November 15, 1941 it was noted that she had a moderate amount of purulent discharge from the right ear. On November 17, 1941 there was a large amount of purulent drainage from both ears. On November 18, 1941 there was a profuse purulent nasal discharge in addition to the aural discharge. The nasal and aural discharges continued and in addition on November 25, 1941 a purulent foul smelling discharge was noted coming from the umbilical area which was inflamed and edematous. Wet boric acid dressings were used on the umbilicus and boric acid solution had been used to irrigate the ears. The drainage from the ears, nose and umbilicus persisted.

On December 1, 1941 a surgical consultation was requested. The note made at that time stated "Anaerobic infection of the umbilicus with foul gangrene of surrounding skin 2 cm. in diameter. On excising the slough a foul smelling cloudy fluid was encountered. Not much inflammatory reaction. No gas." Zinc peroxide paste dressings were ordered.

Ear consultation was requested on Decem-

ber 3, 1941 and a note made at that time stated, "Pus in both canals removed with hydrogen peroxide and an anterior perforation was found to be present in both drums from which a purulent discharge was coming. Imp. Bilateral O. M. P. A."

Treatment and progress.—Hydrogen peroxide was used to cleanse the ear canals three times a day and $\frac{1}{2}\%$ ephedrine sulphate nose drops were used three times a day.

The aural discharge gradually decreased and the umbilical infection apparently was improving. However, on December 10, 1941 a bulging over the left mastoid was noted. Sulphathiazole gr. $\frac{1}{4}$ every four hours was ordered by the pediatric department with no improvement in the child's condition. A diagnosis of acute purulent mastoiditis, left, with cortical perforation and superiorosteal abscess was made. A left simple mastoidectomy (R. W. Hanckel) was done on December 12, 1941, under open drop anesthesia. At the operation a subperiosteal accumulation of pus was encountered. A cortical perforation in McEwen's triangle which communicated with the mastoid antrum was present. Only a few cells besides the antrum were found and the walls of these were necrotic and they were filled with pus and granulations. The cells were exenterated in the usual manner and the sinus and dural plates were identified. There were no exposures. The wound was filled with sulphathiazole powder and an iodoform drain was placed on the powder and brought out at the inferior angle. The wound was closed with skin clips and a dry dressing was applied.

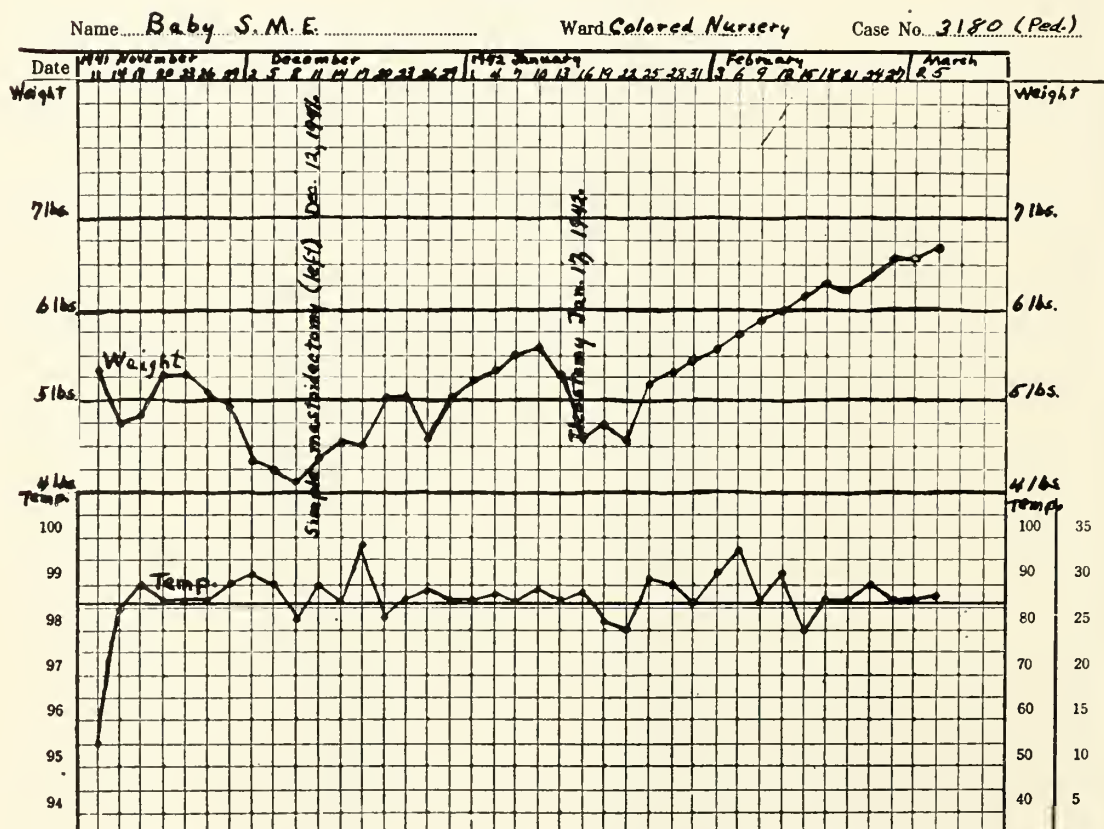
The post-operative course was uneventful. The drain was gradually shortened and finally removed on December 18, 1941, six days post-operatively. The skin clips were loosened on the second post-operative day; half were removed on the third post-operative day, and the remainder on the sixth post-operative day.

Dressings were discontinued on December 12, 1941, the ninth post-operative day. Sulfathiazole gr. 1/4 every four hours was continued post-operatively until December 17, 1941.

Meanwhile the umbilical lesion had changed from a dirty sloughing lesion to a clean, healthy granulating wound. Cod liver oil ointment was used instead of zinc peroxide beginning December 13, 1941. By December 25, 1941 it was noted that the umbilical lesion was not improving and some redness of the surrounding skin was present. On January 5, 1942 and January 6, 1942 surface erosion of the umbilicus began and there developed an area of dirty granulating tissue 3 x 5 cm. Also an external hemorrhoid the size of a "raisin"

was noted. Hot wet sodium chloride dressings were applied to the umbilical infection. The hemorrhoid was incised, the clot evacuated, and this wound healed uneventfully. The external appearance of the umbilical wound improved; however, on January 14, 1942 a fecal fistula in the lower right segment of the wound was noted. Operation at that time was advised against. On January 17, 1942 a three inch segment of the small intestine, probably ileum, protruded through the defect in the abdominal wall. A perforation 1/2 inch in diameter through the intestinal wall was present in this segment. Evagination of the mucosal lining through this latter perforation had occurred, so that the ileum was turned "inside out" for a short distance.

ROPER HOSPITAL CLINICAL CHART



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Ariail, R. H.	Laurens, S. C.	Black, W. A.	Beaufort, S. C.
Asbill, D. S.	Columbia, S. C.	Blackmon, S. J.	Kershaw, S. C.
Asbill, F. G.	Ridge Spring, S. C.	Blackmon, W. R.	Rock Hill, S. C.
Assey, J. T.	Georgetown, S. C.	Blake, C. H.	Greenwood, S. C.
Assey, P. E.	Georgetown, S. C.	Blake, Herbert	Anderson, S. C.
		Blakey, R. A.	Greenville, S. C.
Bailey, C. W.	Spartanburg, S. C.	Blanchard, A. S.	Williston, S. C.
Bailey, H. P.	Greenville, S. C.	Blanchard, F. A.	Bishopville, S. C.
Baker, A. E.	Charleston, S. C.	Boatwright, P. J.	Orangeburg, S. C.
Baker, B. R.	Charleston, S. C.	Boette, Chas. D.	Charleston, S. C.
Baker, C. R. F.	Sumter, S. C.	Boggs, Lonita	Greenville, S. C.
Baker, H. I.	Hemingway, S. C.	Boggs, L. W.	Greenville, S. C.
<i>Baker, R. J.</i>	<i>Charleston, S. C.</i>	Boggs, M. J.	Abbeville, S. C.
Baldwin, W. E.	Walhalla, S. C.	Bolin, G. C.	Orangeburg, S. C.
Ball, J. A.*	Charleston, S. C.	<i>Booker, J. P.</i>	<i>Walhalla, S. C.</i>
<i>Ball, R. W.</i>	<i>Columbia, S. C.</i>	Boone, John A.	Charleston, S. C.
<i>Ball, Wm. J.</i>	<i>Charleston, S. C.</i>	Boone, J. E.	Columbia, S. C.
Banov, Leon	Charleston, S. C.	Boone, L. D.	Aiken, S. C.
Bare, Goodman	Anderson, S. C.	Boone, Walter	Gaffney, S. C.
<i>Barnes, L. P.</i>	<i>Bennettsville, S. C.</i>	Boozer, A. E.*	Columbia, S. C.
<i>Barnwell, E. H.</i>	<i>Martin's Point, S. C.</i>	<i>Bowen, Harold J.</i>	<i>Charleston, S. C.</i>
Barron, E. W.	Columbia, S. C.	Bowen, W. C.*	Belton, S. C.
Barron, W. R.*	Columbia, S. C.	Bowers, T. E.	Charleston, S. C.
<i>Barron, W. T.</i>	<i>Columbia, S. C.</i>	Boyd, W. A.*	Columbia, S. C.
Bates, C. O.	Greenville, S. C.	Boyd, W. W.*	Spartanburg, S. C.
<i>Bates, P. T.</i>	<i>Greenville, S. C.</i>	Bozard, A. C.	Manning, S. C.
Bates, W. L.	Greenville, S. C.	<i>Brabham, Jas. C.</i>	<i>Union, S. C.</i>
Battle, G. C.	Columbia, S. C.	Brabham, V. W., Jr.	Orangeburg, S. C.
Bauer, V. L.	Hemingway, S. C.	Brabham, V. W., Sr.	Orangeburg, S. C.
Beach, M. W.	Charleston, S. C.	Brackett, N. C.	Pickens, S. C.
		Bradham, A. C.	Anderson, S. C.
		Brailsford, A. M.	Camden, S. C.

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italics designate men in service)

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 Brannon, L. J.-----Columbia, S. C.
 Bratton, J. R.-----Rock Hill, S. C.
 Brewer, J. M.-----Kershaw, S. C.
 Brice, J. M.-----Kingstree, S. C.
 Bristow, W. J.-----Columbia, S. C.
 Brockman, W. T.-----Greenville, S. C.
 Brodie, J. E.-----Greenwood, S. C.
 Brooks, T. G.-----Aiken, S. C.
 Brown, Eugene-----Greenville, S. C.
 Brown, G. C., Jr.-----Walterboro, S. C.
 Browning, A. W.-----Elloree, S. C.
 Bruce, John L.-----Florence, S. C.
 Bruce, R. C.-----Greenville, S. C.
 Brunson, Francis-----Sumter, S. C.
 Brunson, J. E.-----Taylors, S. C.
 Brunson, J. W.-----Camden, S. C.
 Brunson, P. A.-----Ridge Spring, S. C.
 Brunson, Sophia*-----Sumter, S. C.
 Bryan, L. S.-----Columbia, S. C.
 Bryson, E. J.-----Liberty, S. C.
 Buckner, Margaret-----McColl, S. C.
 Buist, A. J., Jr.-----Charleston, S. C.
 Buist, A. J., Sr.*-----Charleston, S. C.
 Bullock, C. T.-----Columbia, S. C.
 Bultman, R. B.-----Sumter, S. C.
 Bunch, G. H.*-----Columbia, S. C.
 Bundy, J. L.-----Rock Hill, S. C.
 Burgess, W. H.-----Sumter, S. C.
 Burgess, W. S.-----Sumter, S. C.
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 Byerly, W. L.-----Hartsville, S. C.

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 Cain, J. P., Jr.-----Mullins, S. C.
 Callison, H. G.-----Columbia, S. C.
 Camp, Ned-----Anderson, S. C.
 Campbell, S. D.-----Piedmont, S. C.
 Campbell, T. A.-----Blacksburg, S. C.
 Cannon, J. H.-----Charleston, S. C.
 Carnes, W. C.-----Lancaster, S. C.
 Carpenter, F. L.-----Latta, S. C.
 Carpenter, W. M.-----Greenville, S. C.
 Carrigan, G. B.-----Columbia, S. C.
 Carrigan, W. A.*-----Society Hill, S. C.
 Carrigan, W. H.-----Summerton, S. C.
 Carroll, J. W.-----Russellville, S. C.
 Carroll, T. B.-----Hardeeville, S. C.
 Carter, J. T.-----Spartanburg, S. C.
 Cash, J. B.-----Chesnee, S. C.
 Cashwell, R. L.-----Greenville, S. C.
 Cathcart, Hugh-----Charleston, S. C.
 Cathcart, J. H.-----Gaffney, S. C.
 Cathcart, R. S.*-----Charleston, S. C.
 Caughman, B. D.-----Columbia, S. C.
 Chambers, G. W.-----Anderson, S. C.
 Chamberlain, O. B.-----Charleston, S. C.
 Chance, F. S.-----Chester, S. C.
 Chandler, J. J.-----Sumter, S. C.

Chapman, J. W.-----Walterboro, S. C.
 Chapman, W. H.-----Whitney, S. C.
 Chappell, B. S.-----Columbia, S. C.
 Charles, R. C.-----Bennettsville, S. C.
 Cheatham, M. W.-----Columbia, S. C.
 Clark, N. T.-----Spartanburg, S. C.
 Clatworthy, J. W.-----Greenville, S. C.
 Claussen, John R.-----Florence, S. C.
 Claytor, H.*-----Hopkins, S. C.
 Cleckley, J. J.-----Bamberg, S. C.
 Clinkscales, G. S.-----Anderson, S. C.
 Cockfield, R. L.-----Lake City, S. C.
 Coleman, F. P.-----Columbia, S. C.
 Coleman, L. H.-----Spartanburg, S. C.
 Coleman, Stanley-----Traveler's Rest, S. C.
 Cone, Wallis D.-----Williston, S. C.
 Connor, P. M.-----Neeses, S. C.
 Converse, J. P.-----Greenville, S. C.
 Corbett, J. W.*-----Camden, S. C.
 Corn, C. P.-----Greenville, S. C.
 Crawford, R. L.-----Lancaster, S. C.
 Crawley, W. G.-----Lancaster, S. C.
 Crook, Martin-----Spartanburg, S. C.
 Crooks, J. H.-----Greenville, S. C.
 Crosby, C. E.-----Greenwood, S. C.
 Crosland, J. E.-----Greenville, S. C.
 Crowson, Jas.-----Leesville, S. C.
 Crow, J. F.-----Spartanburg, S. C.
 Cudd, J. E.-----Spartanburg, S. C.
 Culbreath, Paul-----Ellenton, S. C.
 Culler, O. Z.-----Orangeburg, S. C.
 Cutchin, Joe H.-----Easley, S. C.
 Cuttino, J. T.-----Columbia, S. C.

Dacus, R. M., Jr.-----Greenville, S. C.
 Daniel, H. M.-----Anderson, S. C.
 Daniels, F. M.-----Greenville, S. C.
 Danner, J. H.-----Holly Hill, S. C.
 Darwin, J. T.*-----Gaffney, S. C.
 Davenport, J. F.-----Timmons ville, S. C.
 Davis, J. M.-----Columbia, S. C.
 Davis, J. T.-----Walhalla, S. C.
 Davis, J. W.*-----Clinton, S. C.
 Davis, L. C.-----Columbia, S. C.
 Dawson, Geo. R.-----Charleston, S. C.
 Deas, Henry-----Charleston, S. C.
 Dendy, W. S.-----Pelzer, S. C.
 DeSaussure, H. W.-----Charleston, S. C.
 DesPortes, J. R.-----Fort Mill, S. C.
 Dibble, E. M.*-----Marion, S. C.
 Dobson, J. F.-----Ridgeway, S. C.
 Donnon, J. I.*-----Ware Shoals, S. C.
 Dotterer, T. D.-----Columbia, S. C.
 Doughty, R. G.-----Columbia, S. C.
 Dove, H. R.-----Columbia, S. C.
 Doyle, W. R.*-----Seneca, S. C.
 DuBose, T. M., Jr.-----Columbia, S. C.
 Dulin, T. N.*-----Clover, S. C.
 Dunlap, J. O.-----Rock Hill, S. C.
 Dunn, J. R.-----Sumter, S. C.
 Dunnivant, R. B.-----Edgefield, S. C.

Durham, I. D.	Columbia, S. C.	Gamble, E. B.	New Zion, S. C.
Durham, R. B.	Columbia, S. C.	Gantt, R. B.	Charleston, S. C.
Durst, Geo. G.	Greenwood, S. C.	Garrett, J. F.	Greenville, S. C.
Dwight, F. M.*	Sumter, S. C.	Garvin, O. D.	Spartanburg, S. C.
		Gaston, F. P.	Rock Hill, S. C.
Eaddy, A. M.	Columbia, S. C.	Gaston, J. N., Jr.	Chester, S. C.
Eaddy, N. O.	Sumter, S. C.	Gaston, J. N., Sr.	Edgmoor, S. C.
Eargle, H. M.	Orangeburg, S. C.	Geiger, F. L.	Columbia, S. C.
Earle, C. B.*	Greenville, S. C.	George, W. E.	Columbia, S. C.
Earle, J. B.*	Greenville, S. C.	Gibbes, J. H.	Columbia, S. C.
Edwards, G. B.*	Darlington, S. C.	Gibbes, R. W.*	Columbia, S. C.
Edwards, H. A.	Latta, S. C.	Gibbs, W. R.	Buffalo, S. C.
Edwards, J. B.	Swansea, S. C.	Gibson, W. T.	Batesburg, S. C.
Edwards, P. H.	Conway, S. C.	Giles, C. T. J.*	Greenville, S. C.
Edwards, W. W.	Greenville, S. C.	Gilmore, H. S.	Nichols, S. C.
Elliott, J. B.	Fort Mill, S. C.	Glennon, T. L.	Denmark, S. C.
Ellis, Daniel W.	Charleston, S. C.	Goings, J. G.*	Union, S. C.
Eppe, C. B.*	Sumter, S. C.	Goldsmith, T. G.	Greenville, S. C.
Epting, C. H.	Columbia, S. C.	Goodlett, O. M., Jr.	Pelzer, S. C.
Epting, E. E.	Anderson, S. C.	Goodwin, C. L.	Holly Hill, S. C.
Esckridge, Edith	Columbia, S. C.	Graham, B.	Clinton, S. C.
Evans, D. M.	Lake City, S. C.	Graham, C. M.	Clio, S. C.
Evans, Wm.	Bennettsville, S. C.	Gray, Ellis B.	Laurens, S. C.
Evatt, Clay W.	Charleston, S. C.	Gray, J. L.*	Anderson, S. C.
		Green, J. T.	Columbia, S. C.
Fair, C. H.	Greenville, S. C.	Greene, J. T.	Elloree, S. C.
Fairey, T. K.	Johnston, S. C.	Gregg, D. B.	Columbia, S. C.
Farmer, Rudolph	State Park, S. C.	Griffin, H. H.*	Columbia, S. C.
Fennel, J. L.*	Waterloo, S. C.	Griggs, D. C.	Pageland, S. C.
Fennell, W. W.	Rock Hill, S. C.	Grigsby, W. D.*	Blaney, S. C.
Fewell, John M.	Greenville, S. C.	Grimball, I. H.	Greenville, S. C.
Fewell, W. S.	Greenville, S. C.	Gross, H. A.	Barnwell, S. C.
Finger, Elliott	Marion, S. C.	Guerry, LeGrande*	Columbia, S. C.
Finklea, O. T.	Florence, S. C.	Guess, J. D.	Greenville, S. C.
Finney, C. S.	Spartanburg, S. C.	Guigner, J. B.*	Columbia, S. C.
Finney, R. P.	Spartanburg, S. C.	Guyton, C. L.	Columbia, S. C.
Fishburn, S. B.*	Columbia, S. C.		
Fishburne, W. K.	Moncks Corner, S. C.	Haddock, S. H.	Anderson, S. C.
Fleming, John M.	Spartanburg, S. C.	Hair, J. T.	Aiken, S. C.
Floyd, J. B.	Great Falls, S. C.	Hall, H. F.	Columbia, S. C.
Floyd, L. C.	Olanda, S. C.	Hall, H. T.	Aiken, S. C.
Folk, J. L.	Fairfax, S. C.	Hall, J. C.	Gaffney, S. C.
Folk, W. H.	Spartanburg, S. C.	Hall, L. F.	State Park, S. C.
Ford, Fred	St. Matthews, S. C.	Hall, T. G.	Westminster, S. C.
Forte, J. A.	North, S. C.	Hall, W. S.	Columbia, S. C.
Fouche, J. A.	Columbia, S. C.	Ham, Coyt	Columbia, S. C.
Fouche, J. W.	Columbia, S. C.	Hames, H. T.	Jonesville, S. C.
Fox, W. M.	Columbia, S. C.	Hamilton, R. G.	Columbia, S. C.
Frampton, James*	Mt. Pleasant, S. C.	Hanckel, R. W.	Charleston, S. C.
Frampton, W. H.	Charleston, S. C.	Hankins, T. C.	Marion, S. C.
Freed, J. E.	Columbia, S. C.	Hardy, B. F.	Dillon, S. C.
Frey, G. B.	Johnsonville, S. C.	Hardy, J. T.	Winnsboro, S. C.
Fulenwider, J. O.	Pageland, S. C.	Harper, J. C.	Greenwood, S. C.
Fuller, R. M.	Greenwood, S. C.	Harper, T. B.	St. Stephen, S. C.
Fulmer, W. E.*	Columbia, S. C.	Harris, H. H.	Anderson, S. C.
Funderburke, I. S.	Cheraw, S. C.	Harris, J. C.	Lancaster, S. C.
Furman, R. B.*	Sumter, S. C.	Harrison, J. D.	Greenwood, S. C.
Furman, Thos. C.	Greenville, S. C.	Harrison, J. P.	Cheraw, S. C.
		Hart, J. G.	Laurens, S. C.
Gaillard, Peter C.	Beaufort, S. C.	Hart, W. A.	Columbia, S. C.
Gaines, T. R.	Anderson, S. C.	Harter, J. W.	Orangeburg, S. C.
		Hartzog, L. G.	Olar, S. C.

Harvin, W. S.	Manning, S. C.	Hughston, Geo. F.	Fairforest, S. C.
Hay, L. S.	Rock Hill, S. C.	Humphries, A. W.	Camden, S. C.
Hay, P. D.	Florence, S. C.	Hunter, J. H.*	Spartanburg, S. C.
Hayne, Isaac	Congaree, S. C.	Hunter, P. W.	York, S. C.
Hayne, J. A.*	Columbia, S. C.	Hutchinson, M. E.	Columbia, S. C.
Hayne, J. A., Jr.	Hampton, S. C.	Huth, P. E.	Sumter, S. C.
Haynie, J. W.	Honea Path, S. C.	Hutto, A. T.	Pelion, S. C.
Haynie, W. R.*	Belton, S. C.		
Haynsworth, C. H.	Greenville, S. C.	Jackson, D. B.*	Greer, S. C.
Hays, S. C.	Clinton, S. C.	Jacobs, C. D.	Kingstree, S. C.
Hearn, Paul P.	Greenville, S. C.	James, F. G.*	Greer, S. C.
Heidt, G. F.	Charleston, S. C.	Jeanes, R. P.	Easley, S. C.
Heise, E. A.	Sumter, S. C.	Jenkins, P. G.	Charleston, S. C.
Hemingway, T. S.	Kingstree, S. C.	Jennings, Douglas	Bennettsville, S. C.
Hendrix, W. T.	Spartanburg, S. C.	Jervey, J. W., Jr.	Greenville, S. C.
Hennies, Geo. A.	Chester, S. C.	Jervey, J. W., Sr.*	Greenville, S. C.
Henry, B. A.*	Anderson, S. C.	Johnson, A. H.	Hemingway, S. C.
Henry, W. J.	Chester, S. C.	Johnson, F. B.	Charleston, S. C.
Henslee, S. C.	Dillon, S. C.	Johnson, Geo. D.	Spartanburg, S. C.
Hentz, E. O.	Anderson, S. C.	Johnson, H. M.	Johnston, S. C.
Herbert, H. W.	Florence, S. C.	Johnston, A. R., Jr.	St. George, S. C.
Herlong, E. E.	Rock Hill, S. C.	Johnston, B. R.	Estill, S. C.
Herring, H. D.	St. George, S. C.	Jordan, F.*	Greenville, S. C.
Hewitt, Ragsdale	Sumter, S. C.	Josey, A. I.	Columbia, S. C.
Heyward, N. B.	Columbia, S. C.	Josey, J. C.	Spartanburg, S. C.
Hicks, E. M.	Florence, S. C.	Josey, R. B.	Columbia, S. C.
Hicks, R. D.	Chester, S. C.	Judy, W. S.	Greenville, S. C.
Hicks, W. E.	Timmons ville, S. C.		
Hiers, H. G.	Bamberg, S. C.	Kalayjian, Bernard	Charleston, S. C.
Hill, C. C.*	Darlington, S. C.	Keels, L. B.	Lynchburg, S. C.
Hill, John B.	Greenville, S. C.	Keisler, D. S.	Leesville, S. C.
Hill, J. C.*	Abbeville, S. C.	Kell, T. B.*	Fort Lawn, S. C.
Hill, R. D.	Pacolet, S. C.	Kelley, E. T.	Kingstree, S. C.
Hinson, A.	Rock Hill, S. C.	Kelley, Wm. H.	Charleston, S. C.
Hiott, J. T.	Charleston, S. C.	Kendall, B. W.	Columbia, S. C.
Hogan, O. F.	Greeleyville, S. C.	Kennedy, F. A.	North Augusta, S. C.
Holley, O. C.	Leesville, S. C.	Kennedy, G. I.	Ninety Six, S. C.
Holloway, W. J.	Greenwood, S. C.	Kibler, C. L.*	Columbia, S. C.
Holloway, W. O.	Chappells, S. C.	Kinard, D. D.	Greenwood, S. C.
Holman, D. O.	Timmons ville, S. C.	King, E. H.	Hartsville, S. C.
Holmes, Gertrude	Greenville, S. C.	King, H. B.	Lake City, S. C.
Holmes, H. B.	Conway, S. C.	King, W. W.	Batesburg, S. C.
Holtzclaw, J. N.	Greenville, S. C.	Kinney, C. A.	Florence, S. C.
Hood E. C.	Darlington, S. C.	Kinney, P. M.	Bennettsville, S. C.
Hood, W. A.*	Hickory Grove, S. C.	Kirkpatrick, L. R.	Belton, S. C.
Hook, M. W.	Cheraw, S. C.	Kitchin, J. W.	Liberty, S. C.
Hope, A. C.	Union, S. C.	Kneece, J. F.	Blackville, S. C.
Hope, H. P.	Union, S. C.	Koopman, H. W.	Clifton, S. C.
Hope, R. M.	Charleston, S. C.	Kredel, F. E.	Charleston, S. C.
Hopkins, T. J.	Columbia, S. C.		
Horger, E. L.	Columbia, S. C.	LaBorde, J. B.	Columbia, S. C.
Horger, E. O., Jr.	Greenville, S. C.	Lancaster, W. B.	Spartanburg, S. C.
Horton, C. C.	Pendleton, S. C.	Land, J. N.	Anderson, S. C.
Hoshall, F. A.	Charleston, S. C.	Lassek, A. M.	Charleston, S. C.
Houck, T. H.	Florence, S. C.	Latimer, J. B.	Anderson, S. C.
Houscal, R. W.	Newberry, S. C.	Law, E. H.	Columbia, S. C.
Houston, R. E.	Greenville, S. C.	Lawther, F. R.	Moncks Corner, S. C.
Howell, J. R.	Aiken, S. C.	Ledbetter, F. C.	Greenville, S. C.
Howell, J. T.	Florence, S. C.	Lee, Lamar	Florence, S. C.
Hughes, J. L.	Greer, S. C.	Lemmon, C. J.*	Sumter, S. C.
		Leonard, O. W.	Spartanburg, S. C.

Leonard, Robt.	Spartanburg, S. C.	Moncrief, W. H.	State Park, S. C.
Lester, W. E.	Mullins, S. C.	Montgomery, B. M.	Kingstree, S. C.
Lide, C. M.	Columbia, S. C.	Mood, G. McF.*	Charleston, S. C.
Lide, L. M.	Florence, S. C.	Mood, H. A.*	Sumter, S. C.
Lindler, C. K.	Columbia, S. C.	Moore, A. T.	Columbia, S. C.
Linton, I. G.	Charleston, S. C.	Moore, E. H.	Newberry, S. C.
Lippert, K. M.	Lancaster, S. C.	Moore, Geo. G.	McColl, S. C.
Lipscomb, J. E.	Greenville, S. C.	Moore, J. C.	Duncan, S. C.
Littlejohn, T. R.*	Sumter, S. C.	Moore, J. C.	McColl, S. C.
Liverman, J. S.	Lexington, S. C.	Moore, M. S.	Charleston, S. C.
Livingston, Robt.	Fountain Inn, S. C.	Moorer, W. M.	Lodge, S. C.
Loadholt, G. W. I.	Fairfax, S. C.	Morehouse, W. G.	Columbia, S. C.
Long, E. W.	Columbia, S. C.	Morgan, H. B.	Ware Shoals, S. C.
Long, V. A.	Prosperity, S. C.	Morrall, S. A.	Graniteville, S. C.
Lowman, A. W.	Denmark, S. C.	Morrison, C. W.	Lancaster, S. C.
Lucas, S. R.	Florence, S. C.	Morrow, Sam J.	Inman, S. C.
Lucas, T. I.	Charleston, S. C.	Mosteller, Malcolm	Columbia, S. C.
Luttrell, L. W.	Walterboro, S. C.	Munro, Catherine N.	Columbia, S. C.
Lynch, Kenneth M.	Charleston, S. C.	Murdoch, J. H., Jr.	Charleston, S. C.
Lynch, W. S.	Lake City, S. C.	Murray, J. G.	Greenville, S. C.
Mabry, F. L.	Abbeville, S. C.	McBrearty, J. D.	Williamston, S. C.
Madden, L. E.	Columbia, S. C.	McCalla, L. H.	Greenville, S. C.
Maddox, Theo*	Union, S. C.	McCants, C. S.	Wimmsboro, S. C.
Maguire, D. L.*	Charleston, S. C.	McCord, O. H.	Woodruff, S. C.
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Ellis, Daniel W.
Evatt, Clay W.
Frampton, W. H.
Gantt, R. B.
Hanckel, Richard W.
Hayne, J. Adams

Heidt, G. Frank
 Hiott, J. T.
 Hope, R. M.
 Hosshall, F. A.
Jenkins, P. G.
 Johnson, F. B.
 Kalayjian, Bernard
 Kelley, Wm. H.
 Kredel, F. E.
 Lasseck, Arthur M.
Linton, I. Grier
Lucas, T. L.
 Lynch, Kenneth M.
 Maguire, D. L., Jr.
 Maguire, D. L., Sr.
 Martin, Foster N.
 Martin, T. Hutson
 Maxyck, McM. K.
 McCrady, R. L.
 McInnes, B. Kater
 Mitchell, J. C.
 Mood, G. McF.
 Moore, M. S.
 Murdoch, J. H., Jr.
 O'Driscoll, W. C.
 O'Hear, James, Jr.
Parker, Edward F.
 Parker, Frank L.
 Pettus, W. J.
 Pratt-Thomas, H. R.
 Price, F. R.
 Price, Wm. H.
 Prioleau, Wm. H.
 Ravenel, B. Owen
 Ravenel, James J.
 Ravenel, W. Jervey
 Remsen, D. B.
Reynolds, T. W.
 Rhame, J. S.
 Rhett, R. B.
 Rhett, Wm. P.
 Rhett, Wythe M.
 Rice, Wm. T.
 Richards, G. P.
 Rivers, Arthur L.
Robertson, H. C., Jr.
 Rutledge, Edward
 Sanders, P. W., Jr.
 Scharlock, T. M.
 Scott, James E., Sr.
Scott, J. E., Jr.
 Settle, John M.
 Siegling, J. A.
 Simmons, W. H.
 Smith, J. E.
 Smith, Wm. A.
 Sparkman, E. H.
 Speissegger, C. A.
 Spiessegger, W. H.
 Steinberg, Matthew

Sughrue, John
 Taft, Robert B.
 Townsend, E. W.
 Townsend, John F.
 Van De Erve, John, Jr.
 Van De Erve, John, Sr.
 Wagner, H. P.
 Waring, Joe I.
Wellbrock, W. L. A.
 Wild, W. W.
Wilson, I. R., Jr.
 Wilson, I. R., Sr.
 Wilson, Lester A.
 Wilson, Robert, Jr.
 Wilson, Robert, Sr.
 Young, John P., Jr.

CHERAW

Funderburke, I. S.
 Harrison, J. P.
 Hook, M. W.
 Purvis, O. H.

CHESNEE

Cash, J. B.
 Reid, S. D.
 Ryan, John
 Ryan, Thos. E.

CHESTER

Chance, F. S.
 Gaston, J. N., Jr.
 Henry, W. J.
 Hennies, Geo. A.
 Hicks, R. D.
 Patterson, V. P.
 Wallace, W. R.
 Wells, Edmond D.
 Young, J. P.
 Wylie, A. M.

CHESTERFIELD

Perry, W. J.
 Perry, Wm. L.
 Wiley, W. R.

CLEMSON

Milford, Lee

CLIFTON

Koopman, Herman W.

CLINTON

Anderson, C. W.
 Davis, J. W.
Graham, B.
 Hays, S. C.
 Rhame, D. O.
 Shealy, F. K.
 Whitten, B. O.
 Young, J. Lee

CLIO

Graham, Chas., M.

CLOVER

Dulin, T. N.
 McGill, W. K.
 Neil, M. B.
 Niell, A. H.

COLUMBIA

Abel, T. D.
 Abel, W. C.
 Adams, E. C. L.
 Adcock, D. F.
 Allison, J. R.
 Asbill, D. S.
Ball, R. W.
 Barron, E. W.
 Barron, W. R.
Barron, W. T.
 Battle, G. C.
 Beckman, W. P.
Benet, George
 Berger, Morley
 Boone, J. E.
 Boozer, A. E.
 Boyd, Wm. A.
 Brannon, L. J.
 Bristow, W. J.
 Bryan, L. S.
 Bullock, C. T.
 Bunch, G. H.
 Burnside, A. F.
Callison, H. G.
 Carrigan, G. B.
 Caughman, B. D.
Chappell, B. S.
 Cheatham, M. W.
Coleman, F. P.
Cuttino, J. T.
Davis, J. M.
 Davis, L. C.
 Dillard, J. A.
Dotterer, T. D.
 Doughty, R. G.
 Dove, H. R.
 DuBose, T. M., Jr.
 Durham, I. D.
 Durham, R. B.
 Durst, George G.
 Eaddy, A. M.
 Epting, C. H.
 Eskrigge, Edith
 Fishburn, S. C.
 Fouche, J. A.
Fouche, J. W.
Fox, W. M.
 Freed, J. E.
 Fulmer, W. E.
 Geiger, R. L.
George, W. E.
 Gibbes, J. H.
 Gibbes, R. W.
Green, J. T.

Gregg, D. B.
Griffin, H. H.
Guerry, LeGrande
Guignerd, J. B.
Guyton, C. L.
Hall, H. F.
Hall, W. S.
Ham, Coyt
Hamilton, R. G.
Hart, W. A.
Heyward, N. B.
Hopkins, T. J.
Horger, E. L.
Hutchinson, M. E.
Josey, A. I.
Josey, R. B.
Kendall, B. W.
Kibler, C. L.
LaBorde, J. B.
Law, E. H.
Lide, C. M.
Lindler, C. K.
Long, E. W.
MacInnis, Katherine B.
Madden, L. E.
Mamin, Harry
Masters, E. W.
Mathias, M. L.
Matthews, D. N.
Mayer, O. B.
McCutchen, G. T.
McDaniel, G. E.
McElroy, H. A.
McIntosh, J. M.
McLendon, S. B.
McNulty, R. B.
Melich, E. I.
Mikell, I. J.
Miller, B. N.
Milling, C. J.
Moore, A. T.
Morehouse, W. G.
Mosteller, Malcolm
Munroe, Catherine N.
Nelson, G. K.
Owens, C. E.
Owens, F. C.
Oxner, C. E.
Peeples, G. S. T.
Pitts, Lewis W.
Pitts, T. A.
Plowden, H. H.
Pope, D. S.
Pratt, John M.
Quattlebaum, J. T.
Rice, M. M.
Rodgers, F. D.
Roof, G. M. S.
Routh, F. M.
Rubinowitz, Benjamin

Sanders, R. L.
Saye, W. E.
Seastrunk, J. G.
Seibels, R. E.
Setzler, J. B.
Shaw, A. E.
Shaw, J. G.
Shealy, K. D.
Sheriff, Hilla
Simons, Sedgwick
Smarr, R. G.
Smith, H. M.
Spivey, C. G.
Swatman, C. A.
Timmons, H. L.
Thompson, J. L.
Tobias, H. W.
Tolbert, S. W.
Tyler, H. A.
Watson, J. B.
Welbourne, Edythe
Weston, William, Jr.
Weston, William, Sr.
Wheeler, S. E.
White, E. P.
Williams, C. F.
Williams, H. B.
Wilson, H. F.
Woods, J. F.
Woodward, Martin B.
Workman, J. B., Jr.
Wyman, B. F.
Wyman, H. E.
Wyman, M. H.
Young, J. H.
Zemp, F. E.

CONWAY
Edwards, P. H.
Holmes, H. B.
Sasser, James A.
Sasser, Paul E.
Scarborough, H. L.

CONGAREE
Hayne, Isaac

CORDOVA
Mack, W. L.

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Alexander, O. A.
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Hill, C. C.
Hood, E. C.
Scott, C. M.
Willcox, J. M.

DENMARK
Glennon, T. L.
Lowman, A. W.

DILLON
Branford, W. V.
Hardy, B. F.
Henslee, S. C.
Michaux, D. M.
Michaux, E. B.
Rosenfeld, A. P.

DUE WEST
Baldwin, Marie
Pressly, W. L.

DUNCAN
Moore, J. C.

EASLEY
Cutchin, Joe H.
Jeanes, R. P.
Pepper, J. C.
Potts, Joe W.
Poole, L. R.
Tripp, C. M.
Wyatt, Ed. F.

EDGEFIELD
Dunnivant, R. B.
Nicholson, A. R.

EDGMOOR
Gaston, J. N., Sr.

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Fender, M. S.

ELLENTON
Culbreath, Paul

ELLOREE
Browning, A. W.
Greene, J. T.

ESTILL
Johnston, B. R.

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Folk, J. L.
Loadholt, G. W. I.
Tuten, W. R.

FAIRFOREST
Hughston, Geo. F.

FAIR PLAY
Mays, W. C.

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Claussen, John R.
Finklea, O. T.
Hay, P. D.
Herbert, H. W.
Hicks, E. M.
Howell, J. T.
Houck, T. H.
Kinney, C. A.

Lee, Lamar
Lide, L. M.
Lucas, S. R.
McLeod, Frank H.
McLeod, James
Mead, Walter R.
Mobley, M. R.
Price, Julian P.
Rhodes, F. K.
Salters, L. B.
Stith, R. B., Jr.
Stokes, J. H.
Smyser, J. D.
Young, Foster H.

FORT LAWN

Kell, T. B.

FORT MILL

Desportes, J. R.
Elliott, J. B.
Settle, H. G.

FOUNTAIN INN

Livingston, Robert
Thomason, J. A.

GAFFNEY

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Nesbitt, L. T.
Pittman, J. G., Jr.
Pittman, J. G., Sr.
Sanders, J. H.
Sherard, S. B.
Thomas, J. P.
Westrope, G. R.

GEORGETOWN

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Assey, P. E.
Bell, F. A.
Siau, J. R.

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Pearce, J. C.
Turnbull, W. C. R.

GRAY COURT

Pace, W. T.

GREAT FALLS

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Webb, J. K.
Webb, L. K.

GREELEYVILLE

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Riser, L. A.

GREENVILLE

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Anderson, J. L.
Ariail, C. C.
Bailey, H. P.
Barksdale, I. S.
Bates, C. O.
Bates, P. T.
Bates, W. L.
Bell, J. W.
Benson, C. P.
Bishop, B. C.
Blakey, R. A.
Boggs, Lonita
Boggs, L. W.
Brockman, W. T.
Brown, Eugene
Brown, R. Kyle
Bruce, R. C.
Carpenter, W. M.
Cashwell, R. L.
Clatworthy, J. W.
Converse, Joe P.
Corn, Chas. P.
Crooks, J. H.
Crosland, Joe E.
Dacus, R. M., Jr.
Daniels, F. M.
Earle, C. B.
Earle, J. B.
Edwards, W. W.
Fair, C. H.
Fewell, John M.
Fewell, W. S.
Furman, Thos. C.
Garrett, J. F.
Giles, C. T. J.
Goldsmith, T. G.
Grimball, I. H.
Guess, J. D.
Haynsworth, Curtis H.
Hearn, Paul P.
Hill, John B.
Holmes, Gertrude
Holtzclaw, J. N.
Horger, E. O., Jr.
Houston, R. E.
Jervy, J. W., Jr.
Jervy, J. W., Sr.
Jordan, F.
Judy, W. S.
Ledbetter, F. C.
Lipscombe, J. E.
Lyday, W. H.
McCalla, L. H.
McLawhorn, B. C.
McLean, J. W.
Murray, J. G.

Nachman, M.
Northrop, T. M.
Pack, A. S.
Parker, Jack D.
Parker, Thos.
Pollitzer, R. M.
Poole, Everett B.
Powe, W. H.
Reeves, T. B.
Ross, Henry
Saunders, J. L.
Scarborough, A. M.
Sharpe, T. S.
Simmons, J. F.
Simmons, West
Smith, Hugh
Smith, Keitt
Stone, W. C.
Tyler, G. T., Jr.
Warner, W. P.
Watson, A. C.
White, J. Warren
Whitworth, Horace
Wilkinson, George R.
Wilson, T. R. W.
Wyatt, C. N.

GREENWOOD

Adams, A. Elbert
Alston, Wm. C., Jr.
Bishop, Walter G.
Blake, C. H.
Brodie, J. E.
Crosby, C. E.
Durst, Geo. G.
Fuller, R. M.
Harper, J. C.
Harrison, J. D.
Holloway, W. J.
Kinard, D. D.
Royal, H. G.
Scurry, C. J.
Simpson, W. A.
Synmes, J. M.
Turner, W. P.
Ward, J. L.

GREER

Allen, D. L.
Alverson, Reginald
Brockman, H. L.
Hughes, James L.
Jackson, D. B.
James, F. G.
Peeples, M. L., Jr.

GRIFFIN, GEORGIA

Perkins, H. R.

GOLDVILLE

Martin, W. T.

HAMPTON
Hayne, James A., Jr.

HARDEEVILLE
Carroll, T. B.

HARTSVILLE
Beasley, W. J.
Byerly, W. L.
King, E. H.
Powe, J. L.
Timmerman, W. B.

HEMINGWAY
Baker, H. L.
Bauer, V. L.
Johnson, A. H.
Rogers, W. C.
Ulmer, J. G.

HICKORY GROVE
Hood, W. A.
Miller, Ben

HOLLY HILL
Danner, J. H.
Goodwin, C. I.
Traywick, J. B.
Wells, Leon

HONEA PATH
Donnald, E. R.
Haynie, Jas. Wm.
Stoudemire, D. C.

HOPKINS
Clayton, H.

INMAN
Miller, C. J.
Morrow, Sam. J.

IVA
Burton, C. H.
Mason, R. E.
Wansley, W. B.

JOHNSONVILLE
Frey, G. B.

JOHNSTON
Fairey, T. K.
Johnson, H. M.
Tucker, E. W.

JONESVILLE
Hames, H. T.

KERSHAW
Belk, J. R.
Blackmon, S. J.
Brewer, J. M.

KINGSTREE
Brice, J. M.
Hemingway, T. S.

Jacobs, C. D.
Kelley, E. T.
Montgomery, B. M.
Ravenel, L. J.
Varner, J. W.

LAKE CITY
Cockfield, R. L.
Evans, Dexter M.
King, H. B.
Lynch, W. S.
Williams, E. M.
Whitehead, J. D.

LAKE VIEW
Elvington, R. F.
McMillan, C. B.
Temple, L. W.

LANCASTER
Carnes, W. C.
Crawford, R. L.
Crawley, W. G.
Harris, J. C.
Lippert, K. M.
Morrison, C. W.
Noel, G. T.
Pittman, J. D.

LANGLEY
Eaves, J. V.

LATTA
Carpenter, F. L.
Bethca, W. S.
Edwards, H. A.

LAURENS
Ariail, R. H.
Gray, Ellis B.
Hart, John G.
Nickles, M. B.
Rutledge, H. M.
Teague, M. M.
Vincent, C. P.

LEESVILLE
Able, Karl L.
Crosson, James
Holley, O. C.
Keisler, D. S.

LEXINGTON
Mathias, J. H.
Liverman, J. S.

LIBERTY
Bryson, E. J.
Kitchin, J. W.
Swords, P. E.

LODGE
Moorer, W. M.

LORIS
Thomas, J. D.

LYNCHBURG
Keels, L. B.

MANNING
Bozard, A. C.
Harvin, W. S.

MARIETTA
Stroud, E. C.

MARION
Dibble, E. M.
Finger, Elliott
Hankins, T. C.
Michie, D. E.
Pearce, James H.

MARTIN'S POINT
Barnwell, E. H.

McCOLL
Buckner, Margaret
Moore, George G.
Moore, J. C.

McCORMICK
Workman, C. H.

MONCK'S CORNER
Fishburne, W. K.
Lawther, F. R.
Walsh, J. N.
Willis, H. A.

MT. PLEASANT
Frampton, James

MULLINS
Cain, J. P., Jr.
Lester, W. E.
Martin, F. L.
Martin, J. L.
McMillan, L. M.
Weston, I'On.

MYRTLE BEACH
Rourk, M. H.
Rourk, W. A.
Windley, Wm. H.
Woods, W. H.

NEESES
Connor, P. M.

NEWBERRY
Able, E. G.
Houscal, R. W.
Neely, A. T.
Pope, T. H.
Rinehart, V. W.
Sease, J. C.
Senn, H. B.
Welling, A. W.

NEW ZION

Gamble, E. B.

NICHOLS

Gilmore, H. S.

NINETY SIX

Kennedy, G. L.
Schneider, L. A.

NORTH

Forte, J. A.
Nelson, M. L.
Sturkie, D. R.

NORTH AUGUSTA

Kennedy, F. A.
Mathis, W. H.

OLANTA

Floyd, L. C.
Thomason, E. H.

OLAR

Hartzog, L. G.

ORANGEBURG

Albergotti, J. M.
Boatwright, P. J.
Bolin, G. C.
Brabham, V. W., Jr.
Brabham, V. W., Sr.
Culler, O. Z.
Eargle, H. M.
Harter, J. W.
Mobley, C. A.
Schiffley, H. T.
Shecut, L. C.
Thackston, L. P.
Truluck, G. M.
Whetsell, W. O.
Willis, A. E.

PACOLET

Hill, Robert D.

PAGELAND

Fulenwider, J. O.
Griggs, D. C.

PAMPLICO

Poston, W. H.

PEAK

Pinner, C. A.

PELION

Hutto, A. T.

PELZER

Dendy, W. S.
Goodlett, O. M., Jr.

PENDLETON

Horton, C. C.

PICKENS

Brackett, N. C.
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Valley, T. P.
Woodruff, P. E.

PIEDMONT

Campbell, S. D.

PROSPERITY

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RIDGELAND

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Ryan, C. P.

RIDGE SPRING

Asbill, F. G.
Brunson, P. A.
McCurry, W. E.

RIDGEWAY

Dobson, J. F.

ROCK HILL

Bigger, D. A.
Blackmon, W. R.
Bratton, J. R.
Bundy, J. L.
Dunlap, J. O.
Fennell, W. W.
Gaston, F. P.
Hay, L. S.
Herlong, E. E.
Hinson, A.
Love, S. G.
MacDonald, Roderick
Massey, J. E.
Quantz, N. G.
Seigle, B. I.
Shippey, S. H.
Simpson, W. E.
Stevens, W. G.
Strait, W. F.
Sumner, Roy
Twitty, W. C.
Walker, D. E.
Ward, W. B.

RUBY

Newsom, R. M.

RUFFIN

Bennett, W. M.

RUSSELLVILLE

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SALUDA

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Wise, O. P.

SCOTIA

Peebles, M. L., Sr.

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Doyle, W. R.
Orr, J. E.
Ross, Sam H.
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Webb, J. N.
Zeigler, R. F., Jr.

SHARON

Saye, J. H.

SIMPSONVILLE

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SLATER

Takacy, Theodore L.

SOCIETY HILL

Carrigan, W. A.

SPARTANBURG

Able, LeGrande
Alford, D. C.
Anderson, Ruskin
Bailey, C. W.
Black, H. S.
Black, S. O.
Boyd, W. W.
Carter, J. T.
Clark, N. T.
Coleman, L. H.
Crook, Martin
Crowe, J. F.
Cudd, J. E.
Finney, Claude S.
Finney, Roy P.
Fleming, John M.
Folk, W. H.
Garvin, O. D.
Hendrix, W. T.
Hunter, J. H.
Johnson, Geo. D.
Josey, J. C.
Knowlton, H. A.
Lancaster, W. B.
Leonard, O. W.
Leonard, Robert
Lyles, W. B.
McDowell, H. E.
Phifer, I. A.
Poole, C. H.
Poole, R. Earle
Price, Geo. W.
Pugh, Ruth Frank
Rigby, Cecil
Rigby, Hallie C.
Saye, E. B.
Scott, W. S.
Sheridan, W. M.
Smith, D. Herbert

Smith, D. L., Jr.
Smith, D. L., Sr
Smith, P. A.
Sparkman, J. R.
Speake, John W.
Temple, P. M.
Thompson, G. E.
Walker, Howard
Watkins, John O.
Way, Roger
Wilson, O. B.
Willson, J. O.
Zimmerman, W. S.

ST. GEORGE

Behling, A. S.
Herring, H. D.
Johnston, A. R., Jr.

ST. MATTHEWS

Ford, Fred
Raysor, H. C.
Symmes, T. H.

ST. STEPHEN

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STATE PARK

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Hall, L. F.
Miller, S. E.
Moncrief, W. F.
Oliver, B. M.
Preston, J. M.

SUMMERTON

Carrigan, W. H.
Stukes, L. C.

SUMMERVILLE

Miles, Louis S.
Mims, J. L.
Tupper, E. D.

SUMTER

Andrews, C. H.
Baker, C. R. F.
Brunson, Francis
Brunson, Sophia
Bultman, R. B.
Burgess, W. H.
Burgess, W. S.
Chandler, J. J.
Dunn, J. R.
Dwight, F. M.
Eaddy, N. O.

Epps, C. B.
Furman, R. B.
Heise, E. A.
Hewett, Ragsdale
Huth, P. E.
Lemmon, C. J.
Littlejohn, T. R.
Mills, W. E.
Mood, H. A.
Parrish, M. E.
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Walker, R. M.
Winter, D. O.
Zerbst, G. M.

SWANSEA

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McDaniel, W. Y.

TIMMONSVILLE

Davenport, J. F.
Hicks, W. E.
Holman, D. O.

TRAVELER'S REST

Coleman, Stanley
Coleman, T. E.
Gaston, S. R.

UNION

Berry, R. R.
Brabham, Jas. C.
Goings, J. G.
Hope, A. C.
Hope, H. P.
Maddox, Theo
McElroy, A. P.
Owings, F. P.
Salley, F. P.
Sarratt, S. G.
Stevens, A. H.
Switzer, Paul K., Jr.
Switzer, Paul K., Sr.

WAGENER

Webb, M. W.

WALHALLA

Baldwin, W. E.
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Booker, J. P.
Davis, J. T.

WALTERBORO

Ackerman, R., Jr.
Ackerman, R., Sr.
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Chapman, J. W.
Luttrell, L. W.
Stokes, L. M.
Vonlehe, J. A.

WARE SHOALS

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Holloway, W. J.
Morgan, H. B.
Williamson, J. P.
Workman, J. B.

WATERLOO

Fennell, J. L.

WEDGEFIELD

Parker, H. M.

WESTMINISTER

Hall, T. G.
Simpson, F. T.
Strickland, W. A.

WHITMIRE

Norville, W. L.
Thomas, H. B.

WHITNEY

Chapman, Wm. Herbert

WILLIAMSTON

McBrearty, J. D.

WILLISTON

Blanchard, A. S.
Cone, Wallis

WINNSBORO

Estes, Amos C.
Hardy, J. T.
McCants, C. S.

WOODRUFF

McCord, O. H.
Pearson, A. S.
Woodruff, W. A.
Workman, B. J.

YORK

Hunter, P. W.
Roper, C. P.
Strong, E. E.
Whitesides, W. C.



Operation:—(H. G. Smithey, M.D.) On January 17, 1942 under open drop ether anesthesia, the eviscerated intestine was freed and the mucosa reduced. A No. 14 mushroom catheter was secured by purse-strings in the bowel perforation, thus forming an enterostomy, and was brought out through the umbilical defect. The latter was closed with through and through silk worm gut sutures. No drains.

The bowel was not distended and no peritonitis was evident at operation.

The post-operative course was uneventful. The enterostomy tube was removed on January 25th. The abdominal wound closed spontaneously. By February 15th the abdominal wound had healed firmly with good thick skin over the wound.

The patient was discharged on March 6, 1942 in good condition.

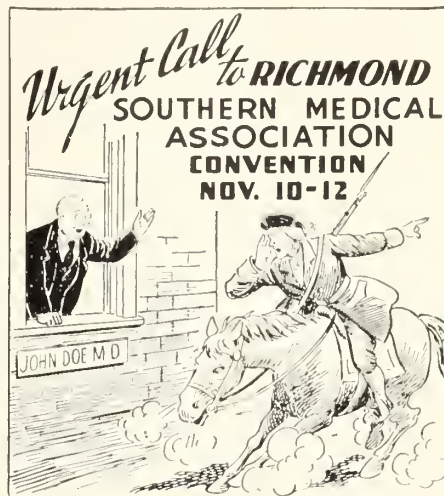
Fluctuations in weight are noted on the attached chart. It would appear that the fluctuations in weight were a better indication of the changes in the patient's condition than the temperature chart, which showed no marked elevation at that time.

In concluding the author wishes to thank Dr. W. J. Ball of the pediatric department and Dr. H. G. Smithey of the surgical department for their close cooperation in the handling of this case and Dr. Smithey for being kind enough to review the surgical portion of this paper.

SUMMER DIARRHEA IN BABIES

Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 8 level tablespoonfuls of Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. Three to six teaspoonfuls of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies.

Please send for samples to Mead Johnson & Company, Evansville, Indiana.



PHYSICIANS of the South have an urgent call to Richmond for the annual meeting of the Southern Medical Association, Tuesday, Wednesday and Thursday, November 10-11-12—a great wartime meeting. In the general clinical sessions, the twenty sections, the four independent medical societies meeting conjointly and the scientific and technical exhibits, every phase of medicine and surgery will be covered—the last word in modern, practical, scientific medicine and surgery. Addresses and papers will be given by distinguished physicians not only from the South but from other parts of the United States.

REGARDLESS of what any physician may be interested in, regardless of how general or how limited his interest, there will be at Richmond a program to challenge that interest and make it worth-while for him to attend.

ALL MEMBERS of State and County medical societies in the South are cordially invited to attend. And all members of state and county medical societies in the South should be and can be members of the Southern Medical Association. The annual dues of \$4.00 include the Southern Medical Journal, a journal valuable to physicians of the South, one that each should have on his reading table.

SOUTHERN MEDICAL ASSOCIATION
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Case Report

Pregnancy With Foreign Body in the Uterus

R. L. CASHWELL, M.D., F.A.C.S.
GREENVILLE, S. C.

Mrs. R. H., Hospital File No. 2382, age 25, was admitted to the Greenville General Hospital on April 28, 1942 with the following history: Present illness began 6 days before admission to the hospital when she became disturbed because her menstrual period was about 2 weeks overdue, and attempted to "open up her cervix" with a metal bobby pin which she lost in the process. This was followed by slight vaginal bleeding.

Past History: Usual childhood diseases, uncomplicated. Tonsillectomy at age of 13 years.

Marital: Married 9 years, 5 living children including one set of twins, 2 miscarriages at 3 1/2 and 4 months respectively. Menstrual: 13x28x4 with pain first day.

On admission to hospital her W. B. C. was 10,000 with 88% Neutrophiles, temperature 99 degrees. X-ray of the pelvic region revealed a metallic foreign body, resembling a hair pin in the right lower quadrant that could be either in the uterus or right broad ligament.

Vaginal examination revealed a slightly enlarged uterus, soft cervix which was thought to be an early pregnancy. Patient was sent home after one week, and advised to return if she had any trouble.

She was readmitted to hospital July 21, 1942 on advice of her family physician with complaint of vaginal discharge and some bleeding for 2 weeks during which time she had been in bed. The bleeding stopped in a few hours. The fundus could be felt just below the umbilicus. Blood and urine were normal. Patient thought she could feel fetal movements and the fetal heart sounds were present. At this time she seemed anxious to go through with the pregnancy and was allowed to go home again.

She was readmitted to the hospital on August 10, 1942 with history of vaginal bleeding more or less profuse of 3 weeks duration. Her family physician, Dr. R. C. Alverson, to whom I am indebted for this patient, agreed

with me that the fetus was dead and that abortion was inevitable. Rectal examination revealed an undilated cervix, in spite of cramping labor-like pains of several days duration.

On August 12, 1942 under ether anesthesia the uterus was emptied by hysterotomy and an untarnished "bobby pin" was found lying between the anterior uterine wall and the placenta about the center of the placental attachment. The placenta showed several organized blood clots and areas of scar tissue. The fetus was dead and about size of 4 months gestation. Two grams of sulfamidamide crystals were left in uterine cavity. Tubal ligation was done at the request of the patient, her husband, and family physician. Her post-operative course was uneventful and she was discharged on August 25, 1942.

This case is reported first because of the relatively few cases of pregnancy complicated by foreign bodies in the uterus that I have been able to find in the literature, and second because of the long time interval between introduction of the foreign body and fetal death.

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OF THE

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Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Original manuscripts, subject to approval by the Editor and the Editorial Board, are desired for publication in the Journal. They should be typewritten, double spaced, on 8½ x 11 paper. References should be complete, and only such as relate directly to statements quoted in the paper. Illustrations will be used as funds permit, or as authors are willing to bear the necessary increase in cost. Short original articles are preferred to long reviews.

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OCTOBER, 1942

PLAY

The Institute of Life Insurance has issued five simple health rules:

Eat right,

Get your rest,

See your doctor once a year,

Keep clean,

Play some each day.

These rules are fundamentally sound and everyone, including the practitioner of medicine, would be better off if he followed them.

Physicians know what they should eat and most physicians eat well—when they find the time and opportunity. Few physicians need to be encouraged to get their rest—all they need is a bed and a quiet telephone. Physicians see their doctor far more than once a year but the contacts are not of the professional nature which the rule implies. In view of the increasing rate of heart disease among physicians and the amount of physical and emotional strain which must be endured, each physician would be wise to have a thorough "checkup" by his internist before the winter season begins. To keep clean has long since become second nature to the physician who comes in daily contact with disease and there is little need to chide him upon this score.

It is to the last rule which the attention of each physician should be drawn. "Play some each day."

The physician may not be able to go back to the days of his boyhood and play prisoner's

base, hares and hounds, or tag-football, but at least he can find thirty to sixty minutes each day for a romp with the children, a walk out of doors, a game of bridge, or if his joints are stiffening and his brain fagged—a session with a good detective story. And once a week, the physician owes it to himself and to his patients to get away from his office and telephone for two or three hours of real freedom.

There is no better time during the year to roam through the woods than in the weeks ahead. The hunting season will soon be here and the whirl of a bird in flight or the sight of a dove in the early morning light will chase the cobwebs out of any brain. An old suit of clothes, a flat bottom boat, and a fishing rod will help any physician to forget that neurotic patients still exist. The golf course with its luscious fairways and less-luscious rough will force the beginner or the professional to discard his medical worries. For those who are more energetic, bicycle riding is back in style and affords both exercise and a chance to view the scenery. The trees in the yard need pruning and the shrubs and flower gardens need tending. And finally, for those who are domestic or henpecked, there is much to be done around the house.

The days ahead give promise of work to be done—more work than ever before. To prepare for this and to endure it when it comes, the physician would do well to observe the five simple rules of health, and particularly that rule regarding play.

CASE REPORTS

Elsewhere in this issue appear two Case Reports which we believe our readers will find interesting and informative. And we hope in the coming months to present more articles of this type.

The publication of a Case Report is not only advantageous to the Journal and its readers but it is also of distinct value to the one who prepares that report. For the seasoned medical writer it affords an excellent medium through which to present, briefly, the picture of a single patient and the facts or lessons which that picture teaches. To the literary neophyte, that physician who has often dreamed of gathering his thoughts on paper but has never done so, the Case Report can become the first step toward the attainment of his goal. It is not easy and yet it is not too difficult for any physician to prepare a report of an unusual or particularly interesting condition as seen in a single patient or in a group of patients. It is a mental exercise to which every physician should subject himself at frequent intervals. All physicians tend to stagnate intellectually if they do not force themselves to perform mental tasks outside of the daily grind of medicine—and the careful and thorough preparation of a Case Report is just such a task and it is an interesting one.

To those who are accustomed to writing medical articles and to those who have never seen the product of their own writing in print—this Journal presents an earnest invitation for you to send us Case Reports which we may consider for publication.

THE DIRECTORY

Once again we present the annual Directory of the members of the South Carolina Medical Association. Effort has been made to make the Directory of practical value to our readers. Names are listed alphabetically and also geographically. Special marks designate Honorary Members and members in service. The Directory is prepared as an insert which can be removed from the Journal without difficulty and can be kept on a physician's desk within easy reach.

Undoubtedly there are a few mistakes and we would appreciate readers calling our attention to these.

Extra copies of this Directory may be obtained at twenty-five cents per copy. Orders should be placed with the Editor immediately so that a sufficient number will be available.

REFRESHER COURSE

In an effort to give physicians an opportunity to renew their acquaintance with conditions which they may have forgotten and thus to prepare them for whatever lies ahead, the Alumni Association of the Medical College is sponsoring a Refresher Course which will be held in Charleston at the Medical College November 4th and 5th. All physicians who can are urged to attend.

The tentative schedule, submitted by Dr. J. I. Waring, Chairman of the Committee on the Refresher Course, is as follows:

Wednesday, November 4th

9:30 A. M.—Endocrine Aspects of Obstetrics and Gynecology—

(Speaker not yet certain)

10:30—Medical Subject—Nutritional Aspects
Dr. John B. Youmans, Nashville, Tenn.

11:30—Repair of Traumatic Injuries—
Major George K. Lewis and Capt. Alfred J. Suraci

12:30—Medical Clinic—

Dr. Heyward Gibbes, Columbia, S. C.

3:00 P. M. — Round Table Discussion on
Gynecology

Led by Speaker of morning

4:00—Medical Round Table Discussion—

Dr. Youmans

5:00—Pathological Conference — (surgical subject)

Drs. Lewis, Suraci and Lynch

8:30 P. M.—Medicine in War—

Speakers from Army and Navy Medical Corps

Thursday, November 5th

9:30 A. M.—Syphilis—

Dr. Udo J. Wile, University of Michigan
or Dr. A. V. Deibert, Hot Springs, Ark.

10:30—Pediatric Therapy—

Dr. L. R. Holt—Baltimore, Md.

11:30—Medical Subject—

Dr. Eugene Landis, University of
Virginia (?)

12:30—Medical Subject—

Dr. Reginald Fitz, Boston, Mass.

3:00 P. H.—Pediatric Round Table—

Dr. Holt

4:00—Medical Round Table—

Drs. Fitz and Landis

5:00—Pathological Conference (medical sub-
ject)

Dr. Howard Karsner, Cleveland, Ohio;
Drs. Fitz and Holt

8:00 P. M.—Founders Day Banquet—

Lecture by Dr. Howard Karsner, Pro-
fessor of Pathology, Western Reserve
University, on "Aortic Stenosis"

Wanted: Microscopes.

Dr. Robert Wilson, Dean of the Medical College of the State of South Carolina has sent out an S. O. S. for microscopes. New students are unable to purchase these instruments at the present time and Dr. Wilson would like to get in touch with any physician who is willing to lend or lease a microscope to the Medical College for the duration of the war. Please communicate directly with Dr. Wilson.

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THE PIEDMONT POST-GRADUATE ASSEMBLY

The eighth annual session of the Piedmont Post-Graduate Assembly convened in Anderson on September 17th. The holding of it was really a second thought, because at one time the officers had rather definitely decided not to attempt it this year. Three factors are responsible for the decision to have the meeting, but to change it from a session of three days to one of a single day. The first was the feeling that to omit the session this year would mean the end of the Assembly. The second was the determination of one or two individuals that it be held, and the third was the fact that Ex-president Truluck of the State Association had expressed the hope that other similar assemblies be held in the State this year, and it was feared that a decision to omit this would discourage the formation of other groups.

The session this year was in all essential respects the most successful of the eight. It seemed to demonstrate that the one day session is preferable to three successive half-day sessions, and that local men can fill out a program in an excellent manner, provided that the program be built around an outstanding man as a drawing card.

Over sixty men registered. Two-thirds of these were present in the forenoon. The banquet was attended by most of the registrants and by many of their wives. The cost including registration fee, luncheon and banquet was \$4.00, and it was certainly a bargain.

Dr. Alton Ochsner, of New Orleans, was truly the speaker of the day. His facility of expression, the logical sequence of his thought and the charm of his personality makes him eminently fitted for a task such as was assigned to him. In the morning he spoke on the "Management of Peripheral Vascular Diseases," in the afternoon he presented and discussed a case of tumor of the jaw, and in the evening the subject of his address was, "Post-Graduate Development of the Individual Doctor."

Equally as well presented and as interesting was the discussion of "Endometriosis" by Dr. R. L. Sanders, an old Anderson boy come home again from Memphis, where he heads a clinic and is on the faculty of the medical school there. His enthusiastic interest in his subject was contagious, and the group followed him closely. In the afternoon he discussed briefly the subject "Cancer of the Right and Left Colon."

Dr. George Wilkinson discussed "Present Day Management of Diabetes," and "Acute Rheumatic Fever." Dr. R. M. Pollitzer gave a "Clinical Discussion of Problems in Pediatrics." An annual feature of the meeting is the report of the Anderson County Cancer Clinic by its director, Dr. Frank Wrenn. This clinic is doing an excellent work, and draws its patients from several counties. The director's enthusiastic interest and his enthusiasm has made this clinic the outstanding one of the State so far as the number of patients seen and treated is concerned.

The luncheon speaker was Dr. Mason Young recently returned from Soo Chow, China, after a long residence in the East. He spoke interestingly of his experiences and impressions of things and events having a bearing on the war.

The demand that plans be made for a session of the clinic next year was unanimous and therefore officers were elected to carry out the mandate. Dr. George Wilkinson was elected president, Dr. J. R. Young executive vice-president, Dr. Stewart Brown of Royston, Georgia, Dr. J. T. Davis of Walhalla, Dr. C. J. Scurry of Greenwood and Dr. Warren White of Greenville were elected vice-presidents; Dr. A. L. Smethers, Anderson, was reelected secretary-treasurer; and Dr. J. N. Land of Anderson was elected registrar.

The session was closed with a more or less humorous address on the assigned subject, "Endocrine Potpourri," by the reporter.

J. Decherd Guess

Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 469

Student Prystowsky (Presenting):

Present Illness: 47 year old colored man was in good health until 6 months prior to admission to hospital. At that time he began having occasional brief febrile episodes. There were no chills or other symptoms accompanying these febrile periods. About one month prior to admission he began having a moderate but constant presacral pain which did not radiate. About one week later he noticed his legs were very weak, so that it was difficult to walk. This became worse and he later began to feel as if there were pins and needles in them; also some numbness. These symptoms progress and one week prior to admission he first had difficulty urinating. His bladder would become full and then urine would dribble. At this time he developed fecal incontinence and couldn't even tell when his bowels were moving. Because of urinary incontinence with overflow he was admitted to the hospital.

Past History: He had a penile lesion in 1912. He received about 19 arm shots in 1940. Otherwise his past history was negative.

Physical Examination: Revealed a well nourished and developed colored man. Neck and head: there was no evidence of trauma. The pupils were pinpoint, the right smaller than the left. They reacted to accommodation but not to light. Another observer was not sure of the Argyll-Robertson pupil. Extraocular movements were normal. The ears were normal except for slightly impaired hearing on the right. There was a small perforation of the nasal septum. The neck was normal except for a small, firm, painless mass, which seemed to be connected to the sternomastoid muscle. Fundus essentially negative. Glandular: generalized shotty lymph node enlargement. Skin: normal. Chest: symmetrical with equal expansion. Respiration slow and regular of the abdominal type. There was a small, hard, fixed mass in the left chest which appeared to be connected to the 4th rib. Lungs: normal. Cardio-vascular: the heart was not enlarged. The heart sounds were slightly distant, no murmurs. B. P. 180/100. Slight peripheral arteriosclerosis. Abdomen: normal except for an enlarged liver. The edge seemed to be nodular, painless. Genitalia: normal. Rectal: Complete relaxation of the rectal sphincter. Nothing else of note. Neuro-muscular: patient was unable to stand up. Knee-jerks were absent bilaterally, otherwise the reflexes were normal. The superficial reflexes were diminished. There was a complete

anesthesia of the lower extremities up to the level of the L₁ or 2. There was questionable hyperesthesia of the left trunk and left arm, otherwise the sensory examination was normal. One examiner stated that his position sense was intact and that he had a negative Romberg sign, although patient was supposed to be unable to stand.

Laboratory Examination:

Urinalyses: showed 1 to 2 plus albumin; from 50-200 RBC.

Blood: On admission, RBC , WBC 8,600, Hb. 13.5, Lymph. 26, Polys 70, Monos. 2, Eos. 2, Baso. 0.

Sickle-cell preparation: negative. Urea N. 21 mgm., later Spinal Fluid: Xanthochronic, Cell Count 12, 54 mgm.

Collidal Gold 0000011221. Wassermann—positive. Blood Wassermann—positive. Blood sugar: 90 mgm.

Hospital Course: Soon after admission a retention catheter was strapped in place where it remained until his death. The bladder was irrigated twice daily. His temperature was usually normal but there were occasional rises to as high as 101

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degrees. He seemed to grow weaker daily and there was a progressive increase in the degree of anesthesia which was quite noticeable. He did not appear to be acutely ill, however, until the 17th. day when he suddenly became quite ill. He became dyspneic and was unable to talk. His pulse became imperceptible and he expired.

Dr. Boone, (Conducting): Mr. Ball, we would like you to give us your opinion on this case.

Student Ball: There seems to be little doubt that this man had neurosyphilis, but a decision as to the type of involvement is a little difficult. One type that would fit the picture is a diffuse involvement of the central nervous system with main destruction in the upper lumbar segment so as to constitute a transverse myelitis. Transverse myelitis usually occurs about three years after the initial infection, which is against the condition here. Incontinence, complete anesthesia, paraesthesia and absent tendon reflexes are all consistent with transverse myelitis, however. The enlarged liver might be produced by a gummatous process, and the other nodules could be explained in the same way.

One also has to consider an atypical tabes, but the course of the disease was much too sudden, as tabes is usually a slow process. There is usually no complete anesthesia in tabes and preservation of the position sense is certainly strongly against it.

The other possibilities are a malignancy with metastasis to the vertebrae and pressure on cord, tuberculosis of the vertebrae with sudden collapse.

I think the strongest possibility is a diffuse lentic involvement of transverse myelitis.

Dr. Boone: What do you think about the xanthochronic spinal fluid?

Student Ball: Xanthochromia usually suggests trauma with old hemorrhage.

Dr. Boone: What else may it indicate?

Student Ball: I believe tuberculosis can produce a xanthochronic spinal fluid and block of spinal cord canal with pressure on spinal cord can do the same.

Dr. Boone: That is correct. Do you know the name of that syndrome?

Student Ball: No, I do not.

Dr. Boone: Mr. Black, what is your opinion?

Student Black: I agree with the diagnosis of disseminated syphilis with transverse myelitis. I think the picture is also satisfactory for tabes, except for the brief course and suddenness of his illness.

Dr. Boone: How do you explain the various masses?

Student Black: I think the mass attached to the sternocleidomastoid was a lymph node. The intercostal mass may also have been a lymph node or possibly an exostosis.

Dr. Boone: Are lymph nodes in the chest wall common?

Student Black: No, they are unusual.

Dr. Boone: This nodule measured 3 in. x 1 in. x

1 in., whereas the size of the one in the neck is not recorded. Do you think that size is consistent with a lymph node?

Student Black: No, I do not. It must have been caused by something else.

Dr. Boone: What do you think was the condition of the kidneys at necropsy?

Student Black: I would expect them to be normal or perhaps to show minor arterionephrosclerosis.

Dr. Boone: The urea nitrogen rose to 51 mg.%, what do you make of that?

Student Black: I think that may have been due to his retention and generally poor condition. A series of specific gravity readings would be of help.

Student Prystowsky: Here is a series which runs 1.040, 1.028, and 1.018.

Student Black: This shows good concentrating ability and I think the kidneys would be practically normal.

Dr. Boone: Mr. Cathcart, what did you make out of this case?

Student Cathcart: I thought that he had tabes, rather than disseminated syphilis with a transverse myelitis, but the question as to whether or not he had an Argyll-Robertson pupil and the absence of a positive Romberg makes you wonder whether syphilis had anything to do with it.

Dr. Boone: Mr. Davis, can you help us?

Student Davis: I think he had syphilis of the central nervous system, most likely tabes. The enlargement of the liver and the masses in the neck and chest wall still have to be explained. Multiple

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gumnata is a possibility, but not likely. Some form of malignancy should also be considered, but there are few other signs to help you along.

Dr. Boone: Is the xanthochronic fluid for or against tabes?

Student Davis: I would certainly rather not have it while trying to make a diagnosis of tabes.

Dr. Boone: Mr. DeWilton, do you think any other suggestions?

Student DeWilton: The spinal fluid findings suggest a spinal cord tumor, but whether primary or secondary, I am unable to say. Carcinoma of the prostate frequently metastasizes to bone, but there is no indication that the prostate was involved here.

Dr. Boone: Do you think the blood in the urine might indicate a tumor of the kidney?

Student DeWilton: In view of his urinary difficulties and lack of other symptoms referable to the kidneys, I would say no.

Dr. Boone: Does anyone else have anything to say?

Dr. Robert Wilson, Jr.: There are certainly a number of signs and symptoms pointing to syphilis and I think a gumma of the spinal cord with complete or partial block would explain the entire picture.

Dr. Lassek: Syphilis does not appear to be the entire story here. The acuteness of the disease, the anesthesia, the inability to stand which indicates involvement of the motor tracts, and the presacral pain are all against it.

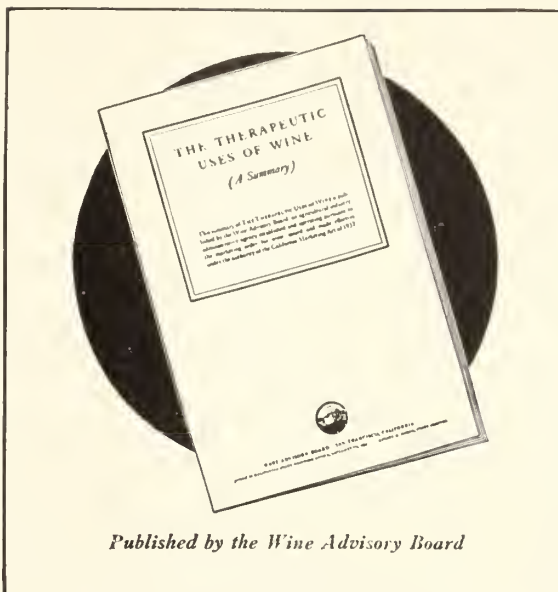
Student Fischer: I wonder if Hodgkins' Disease could not explain it all. It will cause cervical and mediastinal masses and enlargement of the liver. The spleen is also usually enlarged, but this is not essential. The tumor could have spread to the paravertebral nodes and have caused pressure on the nerves either in or outside the spinal cord canal.

Dr. Boone: This case well illustrates the necessity of accurate observation and intelligent interpretation of the signs and symptoms that a patient presents. He either does nor does not have an Argyll-Robertson pupil for instance, and you can't go very far until you clear up such a point.

Dr. Pratt-Thomas (Demonstrating lungs & liver): I think you followed the line of reasoning that most people would have taken in a discussion of this case. Certainly there are a lot of signs of syphilis, but as Dr. Boone has pointed out there are contradictory findings which cannot be fitted in with syphilis. It is these contradictory or questionable findings that give the true lead as to what this patient had. This man had carcinoma of the lung with metastases to the mediastinal lymph nodes, liver and spinal cord canal. Here in the lower lobe of the right lung you see an irregular infiltrative mass of grey neoplastic tissue with an ulcerated papillary elevation projecting into the lumen of the bronchus which is completely obstructed further down.

The mediastinal nodes were greatly enlarged and entirely replaced by soft gray tumor tissue.

The nodule attached to the sternocleidomastoid



THE THERAPEUTIC USES OF WINE

(mailed free upon request)

There has developed an interest within the medical profession that the true physiologic and therapeutic uses and deficiencies (and also the food values) of wine be authoritatively reviewed. Such a review has been prepared in monograph form by qualified and competent medical authorities and constitutes a summary of the pertinent scientific literature of present-day medicine.

The contents include sections on wine as a food, and the actions of wine on the gastro-intestinal system, the cardio-vascular system, the genito-urinary system, the nervous system and the muscles, and the respiratory system. The uses of wine in diabetes mellitus, in acute infectious diseases and in treatment of the aged and convalescent are also discussed. The value of wine as a vehicle for medication is dealt with, and an important section on the contraindications to the use of wine is included. An extensive bibliography is presented for those who may wish to pursue the subject further.

This review results from a study supported by the Wine Advisory Board, an agricultural industry administrative agency established under the California Marketing Act, and has been sponsored by the Society of Medical Friends of Wine.

Members of the medical profession are invited to write for this monograph. Requests should be made to the Wine Advisory Board, 85 Second Street, San Francisco.



was of course a lymph node infiltrated by the tumor. The nodule attached to the left rib was a mass of tumor tissue, the result of pleural metastasis with invasion of the rib and spread to the exterior. There was a similar nodule on the right side in a corresponding position, but here the tumor was growing within the pleural space and as a result was not palpable.

The liver weighed nearly 3500 gms. Here you see a section of it which is largely replaced by large nodules of metastatic carcinoma.

The peri-aortic and para-vertebral lymph nodes were also infiltrated by carcinoma and the tumor extended along the spinal nerve roots and passed between the vertebrae to enter the spinal cord canal.

There was gray mushy tumor tissue in the spinal cord canal at the level of the 11th and 12th thoracic vertebrae, and the entire corda equina was inbedded in tumor tissue.

We believe that this tumor accounts for all the symptomatology. We could find no definite evidence of syphilis. The degeneration in the spinal cord was of irregular spotty distribution, not at all like that of syphilis. The posterior columns probably showed less than any other portions. There was no gliosis and the meninges showed no cellular infiltrations either perivascular or otherwise. The spinal cord changes were due simply to pressure of the tumor.

There were also metastases to the lumbar vertebrae, but no marked destruction.

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BOOK REVIEWS

THE TOXEMIAS OF PREGNANCY. 1941

By William J. Dieckmann

Associate Professor of Obstetrics and Gynecology
University of Chicago, St. Louis, C. V. Mosby Co.

This monograph is a well written treatise on the subject of the toxemias of pregnancy. While it does not apparently add much to what is already known it does present the subject matter with clarity and the organization of the material is excellent.

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY

6th ed. 1942

By Torald Sollman, Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Philadelphia, W. B. Saunders Co.

This edition of an old standard pharmacology text has been almost entirely rewritten and includes much new material on the sulfonamides, antimalarial agents, anesthetics and hypnotics, hormones and vitamins, etc.

The size of the book has been kept within reason by the elimination or condensation of older material that has become of minor importance. The custom of listing and describing all preparations of the *United States Pharmacopoeia* and the *British Pharmacopoeia* has been abandoned and only the more important preparations are described.

Owing to the prolific production of literature in this field references have been restricted to the last 20 years. Anyone with a passion for completeness can refer to the 5th edition or the Surgeon General's Catalogue for the bibliography prior to 1920.

Another change is the listing of titles in English since the use of Latin in prescribing is no longer religiously adhered to.

On the whole this 6th edition follows the same excellent pattern of the earlier volumes and will remain a valuable reference book in pharmacology.

SYNOPSIS OF ANO-RECTAL DISEASES

2nd ed. 1942

By Louis J. Hirschman, Professor of Proctology, Wayne University, St. Louis, C. V. Mosby Co.

This small, compact handbook outlines the procedure used in the treatment of rectal diseases. The illustrations of technique are excellent and will be very useful to the practicing physician.

SYNOPSIS OF MATERIA MEDICA, TOXICOLOGY AND PHARMACOLOGY FOR STUDENTS AND PRACTITIONERS OF MEDICINE

2nd ed. 1942

By Forrest R. Davison, Medical Dept. Upjohn Company, St. Louis, C. V. Mosby Co.

Uncluttered with theoretical discussions, the values and actions of drugs are concisely given. The new titles of the proposed *United States Pharmacopoeia* XII, *National Formulary* VII, and the *British Pharmacopoeia* (Fourth Addendum) have been included. It is primarily intended for use by the medical profession and should prove to be a handy reference tool.

THE NATIONAL FORMULARY

The American Pharmaceutical Association
Seventh Edition—Washington, D. C., 1942

This new edition of an old standby shows many improvements and is expanded very much in the way of material concerning media, laboratory reagents, stains and such matters. It is a book for the pharmacist, who must search it for directions for preparing his products.

To the physician it has a bit of strangeness. Unfamiliar, and to him, unless names seem to crop up over abundantly. Adonis, aletris, condurango, lappa and such things do not enter into his clinical ken, nor does he find many reputable or popular remedies. Perhaps some of these strange compounds may be pushed into use by the deficiencies created by war, or perhaps they lie dormant awaiting scientific investigation and exploration. The impression from a brief survey is that in place of every drug preparation in the book there is something available that is definitely better.

J. I. W.

SYNOPSIS OF PATHOLOGY

W. A. D. Anderson, M.A., M.D.
The C. V. Mosby Company, 1942

In this age of literary condensation when digests, abstracts, synopses and other such abbreviated modes of intellectual enlightenment are rampant, it was natural that we first looked upon this new Synopsis of Pathology with some degree of skepticism. The question arises as to what purpose a synopsis might serve that could not be as adequately filled by one of the excellent modern textbooks of pathology. This question is answered by the author who states that this volume is intended to fill an

existing gap between elementary manuals of pathology and the larger textbooks and reference works. It should serve this purpose well. Pathology like all other branches of medical science has increased in scope and complexity, and unless all of ones time is devoted to this particular field, it is often difficult to keep firm hold on the basic fundamentals and not become lost in the labyrinth of interesting but not absolutely essential facts. Doctor Anderson hopes that this book will furnish medical and dental students and clinicians a compact and concise summary of pathology in which the fundamentals of pathologic processes are clearly presented and easily accessible.

It is a well balanced and attractively bound volume of 661 pages. The type of print used makes it extremely easy to read and the bold black type with which the paragraphs and key terms are accentuated is a notable feature of the text. There are 294 illustrations and 17 color plates and the excellence of the microphotographs and the pictures of gross material play an important part in making the presentation and discussion so lucid and striking. There are also 17 tables which are used to compare and tabulate the different features of closely related entities. These should be very helpful indeed. The fact that this is a synopsis in no way limits the field that it covers. It is as complete in the variety of disease processes that it includes as any of the larger texts. Recent additions to the realm of scientific knowledge such as histoplasmosis, toxoplasmosis and the R-H factors are all included. The references which are included after every chapter are not so numerous as to overwhelm the reader, but have been chosen with the idea of including those which are comprehensive in their particular field, or add to the advance of knowledge in some branch of pathology. Nearly all are recent and are in English.

Anyone who is well acquainted with the contents of this excellent book will certainly be well versed in the fundamentals of pathology.

H. R. P-T.

OUR DOCTORS DO THEIR PART

(The State—June 20, 1942)

The New York Times is calling for a national pool of doctors "on which we can draw for both the armed forces and the civilian population—a pool from which physicians would be allocated with financial guarantees." It argues that the cost of such a plan should not be inordinate since there is evidence enough that workers prefer to pay within

their means rather than to accept charity. "We simply cannot afford," the Times says, "to throw the whole burden of medical care on a few local doctors and imagine that we can win this medical war on the business-as-usual principle."

The editorial is based on Mr. McNutt's address before the American Medical Association, in which the head of the manpower board "though he did not say so, left no doubt that we must reform the system of medical practice if we are to make the most of our industrial manpower." In normal times some 350,000,000 mandays are lost annually through sickness and accidents; and war conditions have brought about an increase of ten percent.

Regardless of what the national situation may be, brought about, of course, by the large number of physicians needed in the service and by the shift of population which war industries have caused, South Carolina's medical men have long since recognized the urgency of the situation and have been keeping a close eye on the distribution of doctors. There are, of course, communities in this state which need more physicians, there are people living too many miles from a doctor, but the record of the profession in this state is one of which all of us may well be proud. South Carolina has led the way in the nation in doctors per capita for the army, navy and the marine corps, and is now ahead of the quota set for next January 1.

CORRESPONDENCE

Julian P. Price, M. D.
Secretary and Treasurer,
South Carolina Medical Association,
Florence, South Carolina.

Dear Sir:

I have your letter of August 31, 1942, addressed to the Surgeon General of the Army, and referred to this office for consideration, relative to sending, as a gift, your monthly Journal to your members who have gone overseas.

The War Department has placed no restrictions on the mailing of letters, newspapers, magazines, or upon parcels or packages weighing up to eleven pounds which are not more than eighteen inches in length or forty two inches in length and girth combined, provided that not more than one parcel or package is mailed in any one week by or for one person to or for one soldier, and that no perishables are included in the package.

Very truly yours,

J. A. ULIO,
Major General,
The Adjutant General.

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Sciatica--A Justification for Conservative Treatment

J. WARREN WHITE, M. D.
GREENVILLE, S. C.

Patients suffering from acute sciatica, Dandy and others notwithstanding, do not necessarily have to undergo spinal operations to get well. While it is admitted that extruded disc material and the so-called hypertrophied ligamentum flavum frequently cause one of the commonest ailments of mankind and that the surgical removal of the offending substance will frequently hasten recovery, its absolute necessity for relief, save in the most exceptional case, is open to question.

When one considers that literally millions of our fellow men on this planet suffer in silence from this condition without consulting physicians, one must appreciate that there exists some way that recovery takes place spontaneously without surgical interference. Granted that disc substance has been extruded posteriorly and encroaches on the spinal canal, is it not probable that this displaced, usually soft, amorphous material will be absorbed as is tissue out of place in other parts of the body? In cases where comminuted fractures have been sustained, we confidently expect displaced bone fragments to be absorbed, and if we remember how ugly keloidal scars shrink in the course of time, we are likely to be happier about our sciatica patients with questionable disc lesions, a great many of whom cannot even afford X-rays.

After viewing a cross section of the body at the level of the fourth or fifth intervertebral space, one cannot help but be impressed by the size of the spinal canal in relation to the relatively small volume taken up by the cauda equina. It would take a great deal of disc material to make enough bulk to actually press on the easily displaced nerve root except where they are immobilized as they leave the canal through the meninges.

Barr and Mixter certainly did make a valuable contribution to modern medicine when they demonstrated without question of doubt one of the commonest causes of sciatica, but they also did create a tremendous problem for the conscientious practitioner who encounters many of these sufferers. These authors together with many others have extolled the value of complicated spinal operations considered by many to be beyond the technical ability of all but neurosurgeons, simple as it is claimed to be, and who, as far as I have been able to find out, have ventured no definite predictions as to the outcome of those unfortunate sufferers (or are they so unfortunate?) who are not in a position physically, financially or otherwise to go through with the operation. In my opinion, neurosurgeons have missed fulfilling a moral obligation in not reporting the end results of those sufferers where path-

ology has been proven and when operation has been refused. There must be a good many in this category; and my feeling, in treating conservatively many cases where I have felt that a disc lesion was present, is that with patience they have a definite chance of recovery. Once again, I must admit that it is likely to be a slower, more aggravating, less dramatic course, but what is usually more important to the patient, less hazardous and expensive.

The other point in this disc problem, which in my opinion has been insufficiently well emphasized, is that an intervertebral disc, where part of its contents has been extruded, frequently is a permanently vulnerable structure. Distress is likely to recur in the severer cases unless a spinal fusion is done, eliminating motion between the vertebral bodies on either side of the damaged disc as well as taking weight off of them. In this way a more permanent healing or organization of the remaining disc material is assured. After this union of the posterior elements has occurred, fusion of the bodies themselves is not beyond expectation in the course of time, just as the vertebral bodies of the sacrum fuse when their transverse processes and laminae ossify. A spinal fusion when an exploratory laminectomy or hemilaminectomy is done is a simple procedure, lengthening the operation only a few minutes and in my estimation is imperative for future security in spite of the many happy outcomes reported without it. One of the difficulties with this exploratory operation is that it really needs for its best performance both the services of a neuro- and an orthopedic surgeon. Few neurosurgeons have had sufficient experience to do easily a routine adequate spinal fusion while bone surgeons are admittedly not at their best doing laminectomies. In small medical centers, such as Greenville, a bone and joint surgeon does only a few laminectomies, while the general surgeon does few more, and it appears to me that the average disc lesion case who cannot afford to be referred to a neurosurgeon had best be treated conservatively. This ordinarily consists of prolonged absolute recumbency (possibly with leg traction), local heat, some type of external

support for a while, and general medical symptomatic treatment, including particularly whatever is needed for adequate intestinal elimination, and finally, last but not least, a determined effort toward improved posture.

The other lesion which frequently causes the low back syndrome is the so-called hypertrophied ligamentum flavum. While I admit this ligament at operation is found thickened and apparently pressing on the underlying nerves, even to interfering with pulsation, I feel that to call it hypertrophied is a misnomer and claim that while it looks hypertrophied, it is thick only because it has become shortened as a result of the lumbar lordosis in the poor postured individual. When the spine is exposed at operation, it must be remembered it is in more flexion than usual in view of the fact that the operating table is "broken" just distal to the lower costal border to facilitate the exposure. The ligamentum flavum having been contracted for so long, just cannot suddenly become thinner and appears thick when exposed over the cauda equina. The ligamentum flavum is lengthened and therefore tightened by this same flexion. The cauda equina being pressed upon by the ligament immediately above it, and gives the impression that this situation is present at all times instead of just at the operation when the spine is flexed.

Posture is a word that apparently has been left out of the modern vocabulary of the neurosurgeon as well as too many orthopedic surgeons. It is my belief that if adequate posture advice is given and followed in most back problems, little further need be done. Poor back posture implies an increase in the curvature of the various sections of the spine, namely: the lumbar lordosis, the dorsal kyphosis and the cervical lordosis or forward position of the head. In the relatively inactive existence, particularly of women, during this machine age, muscles have lost a good deal of their tone and our spines sag, increasing the curve of the elements already mentioned and putting strain on ligaments intended for limitation of motion rather than supporters of weight. The lumbar lordosis is accentuated, shortening by at least one-half (as you may see for yourself

on an articulated spine) the interlaminar space, and thus encouraging the previously mentioned thickening of the ligamentum flavum, as the latter is a definite space occupying structure. With the correction of posture, the lordosis is decreased, the ligament lengthened, and thinned, thus relieving pressure on the nerve roots, particularly the dorsal root with its ganglion just within the spinal canal and meningeal attachment.

My belief is that this latter condition—i. e. the thickening of the ligamentum flavum, is the commoner lesion of the two under discussion, otherwise we would be having more motor disturbance as a result of the extruded disc pressing on the anterior motor root. Pain in sciatica is admittedly the predominating symptom and must result from pressure on the dorsal root which is in close relation to the ligamentum flavum. Weakness is a minor complaint and would ordinarily develop first from pressure from the front—the location of the intervertebral disc extrusion.

The correction of functional posture defects I have found to be an extremely difficult matter. One has to have the complete enthusiastic cooperation of the patient. I admit I am able to get adequate cooperation from the patient in very few cases and so as a necessary supplement, I usually use a heavy canvas corset, ordinarily with extra steel reinforcements. As soon as the acute back pain is relieved by some improvement in posture, the patient forgets his exercises and stance and rarely has the patience to go far enough for permanent relief. The "West Point" attitude, as soon as pain has become a thing of the past, is forgotten often as well as the subsequent check ups by the orthopedist without reminders, which are too often overlooked in a busy of-

fice routine. The "corset" is not much more than an abdominal support in many cases, but it usually does encourage the patient by giving some immediate relief. It is much more convenient and comfortable than adhesive back strapping which is sometimes indicated, but it is of course, not as efficient as a supportive agency. Strapping in the more acute cases may be resorted to for a week or so before graduating to a support. Few general practitioners have access to well trained physical therapists, and usually if they do, their time is occupied by mobilization treatments after acute injuries. In justice to the many patients who need them, we should have regular posture clinics, but even in large medical centers, a great deal of extra enthusiasm to keep them going, important as they are for all of us, is imperative.

A complicated academic discussion of the back problem has purposely not been gone into in this brief paper in the hope that more general practitioners will read it through and be encouraged about the "backs" that they can neither get to a neuro- or orthopedic surgeon. Once again let me state that one orthopedist who sees more backs than any one other condition claims that for the cure of disc or other ligamentous lesions, surgery is rarely necessary and that we must not be too discouraged in not getting our distressing back problems to a specialist. Most of them with a firm hand about absolute recumbency until acute symptoms have subsided will respond to home physical therapy, a simple but sufficiently extensive support ordinarily obtainable from your nearest department store, and a real attempt at improved posture—stomach in, back flat, chest out and chin up—not while they are hurting but for the rest of their lives!

The Work of the Duke Endowment with South Carolina Hospitals

By GEO. P. HARRIS
HOSPITAL SECTION
THE DUKE ENDOWMENT
CHARLOTTE, N. C.

"Just how does The Duke Endowment function? Just what is this Duke aid that so many patients seek in applying for admission to the hospitals in the Carolinas?" It is reported that one administrator new to this section thought this "Dukeade" was perhaps a new drink that was being brought out to relieve the shortage in some of the more popular Cola drinks.

"Why do some hospitals appear to dispense Duke aid rather freely while others seem to withhold it? How does this Endowment Fund help the patient, the hospital, and the physician? Does not The Duke Foundation pay the full cost of caring for the deserving charity case? Does the hospital receive any help from this source in connection with the patient who is able to pay for a part of the cost of his care? Who decides as to the eligibility of a particular patient for aid from The Duke Endowment?"

The administrator of the average hospital in the Carolinas is confronted with questions such as these from time to time in his daily work. The attending physician who understands how The Duke Endowment functions can do more perhaps than anyone else in interpreting this philanthropy to the patient and the general public. In cooperation with the administrator of the local hospital he can also be a vital factor in seeing that the greatest good is derived from the use of these funds.

How The Duke Endowment Functions

There is nothing mysterious or complicated about the way The Duke Endowment functions. Established on December 11, 1924 and operating in this area for over 17 years, most of the physicians in the Carolinas are familiar, at least in a general way, with activities of The Duke Endowment as related to the hospital situation. Let us see if we can not clear up some of the phases of this work which to some may be obscure.

The Trustees of The Duke Endowment say in effect to the trustees of the properly operated non-profit hospital in North or South Carolina: You go ahead and take care of such charity patients as you feel you are able to within the resources of your hospital; at the close of the year file a report with our Charlotte office giving us sufficient information with regard to the financial and professional activities of your hospital for us to determine whether or not it is properly operated within the terms of the Trust Indenture; and if your application is approved, your hospital will receive \$1.00 per day for each free day of care rendered.

What constitutes a free day of care? A *free patient* is one who is *unable to pay* anything for care and treatment. The inability to pay of such patients is determined to a great extent by county and city welfare departments. The American Red Cross, the Associated Charities, Community Chest, and various religious, fraternal, and civic organizations frequently vouch for the indigency of such cases. These various public and private agencies, as a rule, contribute from \$2.00 to \$4.00 per day for the care of such patients and, in addition, The Duke Endowment contributes \$1.00 per day to the hospital as outlined above.

The Duke Endowment also contributes \$1.00 per day for each free day of care rendered part pay patients. A *part pay patient* is defined as a patient who does not pay to the hospital for care and treatment, because he is *unable to pay*, an amount which will average as much per day as the average daily per capita cost of the hospital. The cost of caring for one patient one day in the average South Carolina general hospital admitting both white and Negro patients in 1941 was \$4.08, excluding interest on investment, depreciation, and rent. For illustration, suppose we use a hospital

having a daily per capita cost of \$4.00. A patient is cared for 10 days who is able to pay only \$20.00 for the service rendered him. This \$20.00 pays for 5 days of care at \$4.00 per day, the daily per capita cost of this particular hospital. Since the patient was in the hospital 10 days and was able to pay for only 5 days (based upon the cost of operating this hospital and not upon the amount charged the patient), there were 5 days of care rendered which were not paid for and which represent 5 free days of a part pay patient. The hospital will be entitled to receive \$1.00 per day for each of these 5 (not 10) unpaid for days of care. For the care of this particular patient, the hospital would receive \$20.00 from the patient and \$5.00 from The Duke Endowment, a total of \$25.00, as compared with a cost of caring for him of \$40.00.

As a matter of good business policy, the administrator of the well operated hospital secures and records the essential credit information with regard to any patient whose ability to pay is doubtful. The administrator of each assisted hospital is supplied with a *Manual on Record Keeping Procedures* in which is outlined in detail the matter of the economic classification of patients as to full pay, part pay, and free. The administrators of the assisted hospitals are charged with the responsibility of the proper economic classification of patients and they have in practically every instance manifested a spirit of hearty cooperation in this matter. The attending or referring physician, who is perhaps more familiar than anyone else with the financial ability of the patient, has been of untold assistance to the hospital administrator in determining the true economic status of those seeking admission to the hospital.

With the Duke Endowment paying only approximately one-fourth the cost of care of the average charity patient, one can readily understand why a hospital with very little financial support from the community finds it impossible to take many charity patients.

The Duke Endowment contribution of \$1.00 per day serves as a lever by means of which non-profit hospitals in the Carolinas have been able to secure more liberal contributions from

other agencies. Many hospitals are now securing sufficient funds from their local counties, cities, The Duke Endowment, and other agencies to pay the full cost of care of charity patients. Heretofore the hospitals were, as a rule, forced through necessity to charge the pay patient enough in excess of cost to help in caring for the charity patients. With sufficient funds to take care of the demands for a large portion of the charity work of the community, the assisted hospital has been able to maintain an occupancy that tends to maximum operating efficiency with the resulting lower cost of operation per patient per day. Through this increase in income for the care of charity patients and the accompanying ability to operate at a lower daily per capita cost, the hospital has been able to keep the cost of hospital care for the pay patient down to a minimum.

Ten-Year Review

Although The Duke Endowment has been assisting certain hospitals in South Carolina continuously since 1925, the remainder of this article will be confined to the activities of assisted general hospitals during the past decade, 1931-1941. Twenty-nine general hospitals in South Carolina having 2,246 beds received aid from The Duke Endowment in 1931, whereas in 1941 forty general hospitals located in 27 of the 46 South Carolina counties and having 3,535 beds received assistance. Hospitals assisted in 1941 had 93 per cent of the general hospital beds in South Carolina, exclusive of those operated by the Federal government.

In-patients discharged from assisted hospitals increased from 33,000 in 1931 to 92,000 in 1941, an increase of 179 per cent, whereas the beds in these hospitals increased only 57 per cent. Newborn increased from 2,157 in 1931 to 10,749 in 1941, or an increase of approximately 400 per cent. The average stay of in-patients decreased 2.3 days over the 10-year period, from 11.1 in 1931 to 8.8 in 1941. This decrease in the average length of stay represented a saving of \$362,972 on the care of charity patients in assisted general hospitals in South Carolina for the year 1941 alone.

There has been a steady decrease in the fatality rate in assisted hospitals during the

past 10 years. In 1931 the fatality rate for all patients was 6.9 as compared with 4.5 in 1941, a decrease of 35 per cent. The decrease in average stay together with the decrease in fatality rate is evidence of an improved professional service.

During the past ten years The Duke Endowment has contributed \$3,738,285 to applicant general hospitals in South Carolina, \$3,346,289 for free days of care at \$1.00 per day and \$391,996 for construction and equipment and purchase of hospitals. For every

dollar that The Duke Endowment has contributed, the local communities have contributed from \$2.00 to \$3.00.

During the past decade 3,346,289 or 51 per cent of the 6,558,572 days of care rendered by applicant general hospitals in South Carolina have been free. It is doubtful whether many of the citizens of the State of South Carolina realize the tremendous amount of time and energy expended without financial reward by the 1,000 or more South Carolina physicians and surgeons in the care and treatment of these charity and part charity patients.

Failures in Use of Miller-Abbot Tube in Intestinal Obstruction

A. HINSON, M.D., F.A.C.S.
ROCK HILL, S. C.

Since intestinal intubation with the Miller-Abbot tube has become an established procedure in the management of non-strangulating bowel obstructions in many hospitals it is important that we be able to recognize and remedy the failures that occur in its use.

The first problem is the differentiation of the strangulating from the purely mechanical obstructions. To depend on intestinal intubation in the face of non-viable bowel inevitably invites a catastrophe. The compromised blood supply leads to gangrene and peritonitis unless relieved very quickly. The degree of shock, local tenderness and prostration, coupled with a good history of the course of events leading up to the obstruction aid in differentiation. Strangulating obstructions and those of the large bowel call for immediate surgery. Occasionally the tube may be passed into the cecum through the ileo-cecal valve but it usually takes so long to accomplish this that it is unwise to wait. Waiting here will frequently result in a ruptured bowel and rapid exitus.

Even after the diagnosis of mechanical obstruction is made there are certain mechanical problems which may prove insurmountable.

The time factor is of vital importance as it usually takes from 2 to 24 hours before the tube passes from the stomach. Here it may

coil upon itself, form knots or occasionally completely reverse itself in the esophagus or stomach.

Fluoroscopic or roentgenographic determination of the position of the tube is an invaluable aid. Suction should be maintained constantly from the time the tube enters the stomach. The Wagensteen type of hydraulic suction is usually adequate. Placing the patient on the right side aids in passage of the tube into the duodenum. Occasionally a slight Trendelenberg position is of help. Some type of obturator will undoubtedly be of aid in getting the tube through the pylorus but this is still in the experimental stage.

Inflation of the bag with continued suction promotes the passage of the tube down to the obstructed area. The bag should then be emptied and suction continued. Food may then be given by mouth without fear of further distention as the suction removes any fluid which passes down to that area.

After distention is relieved the tube may be clamped for variable lengths of time. Often continuity of the bowel will become re-established with the passage of feces and gas by rectum. After this occurs the tube may be safely removed. If obstruction recurs a further trial by suction may be indicated. 40 to 60

c. c. of a fine suspension of Barium injected through the tube will often outline the area of obstruction and be of extreme value in subsequent therapy. This is usually removed without much difficulty especially if it is irrigated several times. During this period of suction a careful check should be maintained as to the state of nutrition and electrolyte balance of patient. Infusions of saline in glucose, plasma or whole blood may be indicated. Persistence of the obstruction in the face of adequate suction calls for operative interference. By leaving the tube in situ the necessity of an associated enterostomy is obviated.

The tube may become plugged with intestinal contents or blood as shown in one of the cases below. Usually, however, a thorough irrigation will be followed by adequate suction.

Several causes of failure of the tube to function are reported in the literature.

Johnson¹ reports a failure due to plugging of the tube by orange pulp given the patient by over zealous relatives. Removal of the tube and re-insertion proved satisfactory.

McKittrick and Sarris² report knotting of the tube as a cause of failure. This is much more likely to occur if the tube is allowed to coil in the stomach. After the tube has passed into the duodenum the tugging on the inflated balloon may be readily seen by observing the periodic pull on the strapping used to attach the tube to the face. On several occasions it has been observed to be drawn in the nasal cavity as much as $\frac{1}{2}$ to $\frac{3}{4}$ of an inch.

McKittrick and Sarris also report a rather distressing complication due to a nurse trying to feed the patient through a tube leading to the balloon. This was soon recognized and the feedings carried out through the proper channel. Removal of the tube was difficult, eventually causing rupture of the tube at the cardiac end of the stomach. Feeding by mouth would have done away with this complication.

In one of my cases the balloon could not be deflated. The tube was cut off at the nares and eventually passed by rectum 8 days later. Two distinct knots were found above the balloon. I feel that if the tube cannot be removed with ease no undue pressure should be exerted.

Schlicke, Bargaen and Dixon³ report collapse

and general peritonitis following partial removal of a tube on which the balloon could not be deflated. In one of their cases they found at operation a coiled tube in the bowel causing complete obstruction.

In one of the cases reported below, failure of the tube to function was proved to be due to a blood-clot which acted as a ball valve allowing fluid to be injected into the bowel but nothing to be aspirated.

Wagensteen⁴ refers to one of their cases in which the bulb was in the ileocecal valve causing deflation of only the ileal half. Further traction resulted in rupture of the bulb after which the tube was removed with ease. In view of the general peritonitis reported in one of Schlicke, Bargaen and Dixon's cases it would probably have been a safer procedure to allow the tube to pass per rectum as mentioned in one of my cases.

There seems to be much unjust criticism in the literature of failures to pass the tube out of the stomach. Certainly the extra trauma of manipulating the tube through the pylorus under the fluoroscope is much less than that due to the performance of an enterostomy.

Failures are proportionate to the persistence of the individual who is passing the tube. However, it is just as foolish to persist over long in attempting its passage, for the earlier the relief of distention the better the prognosis.

CASE NO. 1—Mrs. W. E., age 36, was admitted to St. Phillips Hospital May 27, 1942, with a history of menorrhagia of 8 months duration. The onset of periods was every 26 to 28 days but the length of flow had increased in this time from 4 to 12 days. Examination revealed a thin anemic woman of asthenic build. The general examination was normal except for the pelvic area. There was a large rectocele with a lacerated, infected cystic cervix. The uterus was 3 times normal size and contained a nodule the size of an orange in its anterior wall. The adnexa were normal. R. B. C. was 3,800,000, Hemoglobin 60%, Leucocytes 7,000, Polys. 52%. The urinalysis was within normal limits.

On May 28, 1942, under spinal anesthesia, the cervix was coagulated and the perineum repaired. A supra-vaginal hysterectomy (retaining both adnexa) was performed through a low midline incision. 500 c. c. of citrated blood was given immediately following operation. The post operative course was normal for 5 days. The bowels moved on the third day.

The morning of the fifth day she complained of

colicky pains in the abdomen and there was some distention. This responded to an enema and the distention disappeared. Distention recurred intermittently during the next three days, always responding to enemata. During this time two more blood transfusions were given. On June 7 obstruction became complete and did not respond to enemas. The pulse was 96 per minute but the extremities were warm.

The incision was opened under spinal anesthesia and a knuckle of gut was found attached to the right of the stump of the uterus. There had apparently been some oozing of blood in this area and the upper ileum was adherent in a plastic exudate. This was freed and a Witzel type enterostomy performed above with no soiling. The tube was brought out through a stab wound to the left of the incision. 500 c. c. of blood was given by vein and repeated daily for the next two days. The enterostomy drained 600 c. c. of fluid the first and 800 c. c. the second day. The abdomen became flat. 1500 c. c. of 5% glucose in saline was given several times daily to replenish water and electrolytes. The enterostomy drainage was 1000 c. c., 1286 c. c. and 600 c. c. for the next three days. Food was given by mouth and urine output was adequate. The temperature rose to 102 degrees on the second day but promptly fell to normal. The pulse remained of fair volume, between 90 and 110 per minute.

On the 6th day only 60 c. c. of drainage was obtained from the bowel and the abdomen became distended. Several loops of bowel were palpable. The temperature was 97 degrees, the pulse 106 and thready. A Miller-Abbot tube was passed into the stomach and continuous suction started. Two hours later a bedside film showed the tube to be in the 2nd portion of the duodenum. The bulb was distended with 35 c. c. of air and three inches were passed through the nostril every half hour until the entire tube had entered. Thirty six hundred c. c. of fluid and large quantities of gas was aspirated in the first 24 hours. The abdomen became flat and the balloon was deflated. The tube was irrigated every one or two hours to promote drainage. Food was tolerated by mouth after 24 hours.

The tube drained 3000 c. c. to 4000 c. c. of fluid daily. All output and intake being measured. The deficit of intake was made up by 5% glucose in saline by vein. Two small stools were passed on the 15th and 16th. Enemata were only partially effective.

On the night of June 18, 1942, there was a small hemorrhage as shown by the appearance of blood through the Miller-Abbot tube.

On June 19 all drainage had stopped and distended loops of bowel could be made out. The temperature dropped to 96 degrees and the pulse rose to 126 per minute. It was weak and thready. The extremities were cold and sweating. Fluids could be injected but none aspirated through the tube.

Glucose and saline and 500 c. c. of blood were given by vein. An enterostomy was performed under local anesthesia high up on the right into the most palpable loop. Five grams of sulfathiazol was placed about the anastomosis and in the wound. 500 c. c. of plasma in saline was given immediately after operation. The temperature rose to 103 degrees, pulse 140 per minute. She became cyanotic. Within 4 hours another plasma transfusion was given with a drop of temperature and pulse to 100 degrees and 106 respectively. Inhalations of pure oxygen were started with the B. L. B. mask.

There was immediate and continuous drainage from the second enterostomy. 500 c. c. of plasma in saline was given by vein along with adequate amount of water and saline every 12 hours for 3 more days.

Food was taken by mouth on the 2nd day. Oxygen was continued for 3 days after which the cyanosis gradually subsided. It was felt that the cyanosis was due in part to the sulfathiazol in the incision as it did not respond to the inhalation of pure oxygen.

Bowel movements started on the 8th day and both enterostomy tubes were removed the 11th day after having been clamped off for 24 hours, with no evidence of distention. The stitches were removed on the 12th post-operative day. The wounds healed per primum.

She was discharged on July 4, 38 days after admission, having one stool daily.

To date she has remained perfectly well and is back working steadily. In all five blood transfusions and seven plasma transfusions were given.

When the Miller-Abbot tube was removed the distal end was found to be plugged with a clot of blood. Fluid could be passed through it from the nasal to intestinal end after removal but nothing could be forced back by aspiration.

The rubbery consistency of the clot was undoubtedly due in part to the action of the intestinal contents. It was firmly anchored by several small portions continuous through the holes in the tube with another larger clot on the outside.

CASE NO. 2—Mrs. J. L. C., age 67, was first admitted to the York County Hospital on February 20, 1942, because of nausea, vomiting and pain in the abdomen. She had first become nauseated 6 days before after eating canned turnips. There were cramp-like pains in the abdomen and constipation. She improved on intravenous fluids and had several large bowel movements. She was discharged February 24 but was readmitted the following day with a recurrence of symptoms. The only pertinent thing in her past history was an attack of acute cholecystitis one year before. A supravaginal hysterectomy had been performed 20 years before. The patient was obese and acutely ill. The extremities were cold and clammy. Dilated loops of bowel were made out with hyperperistalsis. She had the typical colicky

pains of obstruction. Temperature 100.2 degrees, pulse 82 but weak.

Pelvic examination revealed a carcinoma of the cervix with slight parametrial involvement.

The Miller-Abbot tube was passed into the stomach and Wagensteen suction applied. A flat plate 3 hours later showed the tip to be in the duodenum. The bulb was inflated with 40 c. c. of air.

Two inches was passed every ½ hour and six hours later the abdomen was flat. The patient tolerated food by mouth and was very comfortable.

An X-ray showed the tube to have passed into the mid jejunum and several hours later showed complete arrest at this point. A small amount of barium showed the obstruction to be complete and a calcified mass the size of a goose egg just below the tip of the tube.

The patient was given one blood transfusion of 500 c. c. 5% glucose and salt solution was given twice daily.

On the morning of the third day an X-ray showed no further passage of the tube. There had been no passage of gas or feces by rectum and closure of the tube on three separate occasions resulted in recurrence of distention and colic within ½ to 1 hour.

The abdomen was explored through a mid-left rectus incision under spinal anesthesia. 500 c. c. of plasma in saline was given during operation. No adhesions were encountered in the pelvis but the diagnosis of carcinoma of the cervical stump and parametria was confirmed. In the left mid-abdomen the balloon was felt just above a hard mass, 3 by 3½ inches in diameter. There was relaxation of the intestine above and below showing the efficiency of suction.

A longitudinal incision was made over the stone after it was found impossible to move it within the lumen of the bowel. The bowel was repaired in a transverse manner. Four grams of sulfathiazol was placed about the bowel and abdominal wall incision.

Post-operatively the Miller-Abbot tube was left in situ with suction for 3 days after which time it was clamped off for one day. The bowels moved spontaneously and the tube was removed on the 4th post-operative day.

She was discharged on the 15th of May, 1942, and has had no further abdominal complaints.

Radium and X-ray have been advised repeatedly for the carcinoma but to date she has been unwilling to submit to this treatment.

CASE NO. 3—W. G., colored, age 16, was admitted to the York County Hospital July 18, 1942 with an appendiceal abscess of 4 days duration. He had been seen by me 12 hours after the original attack but his father had refused hospitalization.

There was a tender mass in the R. L. Q. with

muscle spasm. His leucocytes were 8,650 with 84% polys., temperature 101 degrees and pulse 100.

He was given fluids by vein and 2 tablets of sulfathiazol every 4 hours. On the third hospital day the abscess was drained through a short right rectus incision under spinal anesthesia. The appendix presented and was easily removed. Three grams of sulfathiazol was put in the cavity and two cigarette drains. Wagensteen suction was maintained for 3 days through a duodenal catheter. Two blood transfusions were given. No distention occurred and the post-operative course was excellent until the 9th day. He then experienced colicky abdominal pains, distention and obstipation. The Miller Abbot tube was placed in his stomach and 8 hours later an X-ray showed the tube to be in the jejunum. It was rapidly passed down the intestinal tract. On one occasion a check up showed part of the tube to be coiled in the stomach and duodenum. This was remedied by removing part of the tube and allowing it to pass more slowly. Deflation was complete in 18 hours. Food was given by mouth and the bowels moved spontaneously 5 days later. The tube was then removed and the patient discharged. This was evidently a simple obstruction due to plastic adhesions but it was complete. The use of the tube certainly saved this patient the necessity of an enterostomy.

An effort has been made to show some of the common pitfalls of the use of the Miller-Abbot tube. If properly used in selected cases many operations may be prevented, lives saved and hospitalization shortened. If improperly used the results may be fatal. In carefully selected instances it is a step forward in the treatment of obstruction. With the use of suction decompression the mortality rate from obstruction has shown the first decline in many years.

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Chronic Prostatitis

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Chronic prostatitis is a condition of frequent occurrence and interest to both general practitioner and specialist. Patients suffering from this disease do not usually complain of prostatitis but rather of vague and indefinite signs and symptoms which are frequently colored with a varied degree of neurasthenia. Many come with such complaints as pains in the low lumbo-sacral region or down the legs, marked nervousness, feeling of fulness in the rectum or perineum, recurring iritis, and muscle cramps.

In the presence of a urethral discharge, attention is immediately centered on the urino-genital system. In less obvious cases, however, prostatic examination is frequently neglected in the routine examination and the key-stone of diagnosis is missed.

It is a common and fallacious belief among physicians, as well as laymen, that every case of prostatitis means gonorrhea, either in the present or past. This is unfortunate since it leads to embarrassment and a tendency to conceal the presence of a "morning drop" or of sexual change manifested by such signs as impotency, waning sexual power, or premature ejaculations—and these are the very things which should be freely discussed.

It is true that chronic prostatitis is a sequel to gonorrhea in the great majority of cases, especially to the improperly treated or neglected cases which go on to the development of a posterior urethritis with extension into the seminal vesicles. However, there are many other causes of infection in the prostate gland besides gonorrhea and one should consider the prostate gland as a common focus of infection. Lowsley regards the prostate as second only to the tonsils in being responsible for arthritis, endocarditis, neuritis, iritis, and myositis. Due to its insidious nature, chronic prostatitis is often overlooked in casual examination and the patient is subjected needlessly to X-rays of teeth, sinuses, gall-bladder, etc.

(Read before the Oconee County Medical Society, April 13, 1942).

Étiologically, gonorrhea must be considered the prime offender in Chronic Prostatitis and it must be ruled in or out in each specific case. Herman says it is fashionable to ascribe non-specific prostatitis to congestion arising from sexual abuses such as overindulgence, coitus interruptus and imaginarius, all of which may be exciting causes. Suffice it to say that anything which tends to cause congestion of the gland will lay down a suitable field for infection. This infection may come from acute diseases such as influenza and typhoid, or be blood borne from foci in teeth, tonsils, or sinuses. A common cause of prostatic infection urethro-vesicle inflammation—leading on to infection of the ejaculatory ducts and seminal vesicles and prostate—comes from post-operative catheterization. The offending organisms are chiefly staphylococcus, colon bacillus, streptococcus, pneumococcus, or a mixed combination of these. One should always be on the alert for *Trychomonas vaginalis* but rarely is a definite diagnosis of this cause established.

Pathologically, chronic prostatitis may be divided into three types; catarrhal, parenchymatous, and interstitial. The fundamental changes are those of inflammation; congestion, exudation, suppuration, epithelial desquamation, proliferation and scar tissue formation. In the catarrhal form, the inflammation is confined to the mucosa of the tubules and acini, and diagnosis is made from a study of the secretions since the changes in the gland may or may not be determined by digital examination per rectum. In the parenchymatous type, there is an exaggeration of the changes present in the catarrhal type and there is more involvement of the tubular walls and peritubular stroma. There may be partial or complete stricture formation of certain ducts, peri-acinous inflammatory deposits and irregular cystic distension of many acini. On rectal examination, the gland is found to be assymetrically enlarged, and massage often expresses copious secretion with rapid diminution in the

size of the gland. This type is commonly spoken of as the "boggy prostate." In later stages, the greatly dilated acini form suppurating cavities yielding considerable amounts of purulent secretion. Further advancement of this type is characterized by a bosselated feel on digital examination due to irregular deposits of fibrous tissue around groups of acini, producing what is known as follicular prostatitis.

In the interstitial type, very little of the secreting portion remains, having been replaced by scar tissue. What little secretion is expressed is usually filled with pus. In the most advanced type, which follows acute suppurating inflammation, there is fibrous fusion of the gland to the rectal wall and an enlargement and hardening of the seminal vesicles. This form of chronic prostatitis must be differentiated from tuberculous and malignant involvement of the gland.

Since chronic prostatitis involves two systems, the sexual or genital and the urinary, the symptoms are also two-fold. As previously mentioned, chronic prostatitis is an insidious condition and may lie dormant for many years before it makes its presence known. Nocturia is common, due to a temporary partial bladder neck obstruction from a swollen and boggy gland. Even in young high school boys, following a bout of "petting parties," one finds four or five ounces of urine by catheter after they have urinated and declared the bladder empty. This amount of urine may serve as a direct guide to the amount of inflammatory swelling present around the bladder neck. The voided specimen may contain comma-shaped shreds which are the dried secretions which have formed into casts in the ejaculatory ducts. Suprapubic pain with a full bladder is a common complaint, or there may be a hesitancy in beginning the urinary act and a desire to urinate again in a few minutes. These are manifestations of an inflamed prostatic urethra and bladder neck.

The sexual symptoms are always colored by neurasthenia and are best seen in the young individual. Herman puts it this way; "They occur more frequently in the young neurasthenic whose orgasmic sexual imagery promotes hypersecretion of the prostate gland." Be that

as it may, one can usually elicit a history of some change in the sexual activity. A frequent complaint of older men is pain following ejaculation or a bloody ejaculant. Sexual symptoms vary from pseudopriapism to complete impotency. It is wise to advise these patients to put sexual matters out of their minds and to have confidence that sexual ability will be restored. Older men, in the neighborhood of fifty, expect some waning sexual power, but even they are reluctant to attribute it to increasing years alone and expect the physician to correct the condition. The various and sundry gonadotropic and androgenic preparations are merely crutches and are best left alone until the prostatic infection is cured. Later, a stimulating course is indicated and may often be beneficial.

Many sensory symptoms are encountered. Pain is seldom severe and is described as aching and is aggravated by urination, coitus, and defecation. The usual points of pain are the lumbosacral region, the suprapubic region, the perineum, the groin, the testicles, the glans penis, and the inner side of the thighs. Some describe the sensation as fullness, coldness, burning or itching in the urethra. Brinkley aptly spoke of it as "sitting on a cocklebur."

Other symptoms are early fatigue (the business man's five o'clock fog), stiffness of the joints and legs, painful spine, sciatica, and headache. Often improvement in general health and a feeling of well being will ensue after the eradication of a chronic prostatitis.

Four procedures should be used in making the diagnosis of chronic prostatitis; (1) rectal palpation, (2) repeated analyses of the voided urine, (3) microscopic examination of the prostatic secretion and semen, and (4) urethroscopic examination of the posterior urethra and vesical neck.

The normal seminal vesicle is not palpable per rectum and whenever it is encountered protruding above the lateral prostatic lobe, it denotes an inflamed and swollen condition. Rectal palpation alone for diagnosis is inadequate, however, since little or no change will be detected in the gland in the catarrhal form of chronic prostatitis, and here the diagnosis must be upon the finding of pus cells, bacteria,

or blood cells in the voided specimen. In the presence of much pus, blood, or bacteria in the urine, one cannot be certain that one is dealing with a prostatitis alone. Chronic prostatitis is a common forerunner of pyelonephritis, often the primary source. In older men, particularly, one often encounters dilated and tortuous ureters and atonic calyces which have become infected through faulty drainage and probably lymph borne infection from the prostate. Although chronic prostatitis is commonly spoken of as a local infection, it may have far reaching manifestations.

Normal prostatic fluid is thin, pale blue resembling skimmed milk, and alkaline in reaction. When obtained by massage, it usually contains vesicular casts or fluid vesicular secretion. Vesicular casts appear as irregular, gelatinous, transparent, white streaked masses which soon liquify on standing. Liquid vesicular fluid, especially that obtained from continent individuals, is yellow and resembles purulent prostatic fluid. The distinguishing characteristic is the lecithin bodies which appear as various sized translucent globules, usually smaller than a red blood cell. Corpora amylacea are found mostly in older men, compound granule cells are thought to be due to stagnation of the secretion and may or may not be inflammatory in origin. A few leucocytes and epithelial cells complete the picture.

Abnormal prostatic fluid lacks homogeneity, is somewhat granular and streaky, is yellow-tinged, and lacks the characteristic opalescence. There are also variable numbers of pus cells and blood cells and in advanced cases, a complete absence of lecithin bodies. A return of these bodies to the fluid indicated improvement.

Urethroscopic inspection is mentioned last since it should not be the first resort toward diagnosis. It should be done, however, in the presence of unusual features such as persistent urethral discharge, frequent or urgent or painful urination, symptoms of urinary obstruction, and finally, failure to improve under usual treatment. A carefully performed examination with the urethroscope will afford much valuable information and will also permit local treatment in selected cases.

The chances for complete recovery in chronic prostatitis are none too good. In view of this, too much restriction of the usual routine should be avoided since it may lead to neurasthenia. Sexual intercourse within moderation is permissible if it does not aggravate the condition. In passing, it should be noted that in the absence of specific infection, chronic prostatitis is not a source of danger to the sexual mate, nor does it appear to have any effect upon the offspring.

Prostatic massage is the most important therapeutic procedure and should be performed twice a week, but it alone will not suffice to eradicate a chronic prostatitis. Often the ejaculatory ducts are closed, preventing the prostatic fluid from draining into the urethra, and this calls for dilations by either sounds or the Kohlman dilator. The value of massage may be increased by filling the bladder first with a warm antiseptic solution (1:600 neutral acriflavine, 1:5,000 potassium permanganate, 1:10,000 silver nitrate solution) which elevates the gland and seminal vesicles. Most important, however, is the complete coverage of the gland with massage, going well up on the suprapontane portion and over the region of the seminal vesicles.

It is my practice to employ urinary antiseptics by mouth, especially when instrumentation is contemplated. Methanamine, mandelic acid, or one of the sulfonamides are used separately or jointly. The sulfonamides have been recovered in the prostatic fluid and are thought to be especially helpful in the presence of much pyuria and in the coccal type of infection. When one is dealing with a colon bacillus infection, the lower bowel should be investigated. Regulated daily evacuations are important and it is well to change the intestinal flora from a putrefactive to a fermentative state by using lacto-dextrin and by the exclusion of milk, eggs, and meat from the diet. The use of warm enemas consisting of twenty-five percent magnesium sulphate solution followed by instillation of four to eight ounces of cottonseed oil into the rectum will help. Other foci, such as infected teeth, tonsils, sinuses, appendix, and gall bladder, should be eradicated.

Vaccines are usually of little benefit and are of no benefit unless given in conjunction with massage. In long standing cases, with symptoms of backache, etc., a mixed vaccine (staphylococcus, streptococcus, pneumococcus, colon bacillus) given in increasing doses every four days serves to alleviate symptoms. Foreign protein therapy appears to have the same result. Hyperpyrexia is said to be of value in prostatitis of gonorrheal origin but it is expensive, dangerous, and uncomfortable for the patient.

Finally, the patient is advised to eat a wholesome, bland type of diet, to live a regulated sex life with moderation, to avoid excesses especially in the use of alcohol, to regulate bowel elimination, and to endeavor above all not to become "prostate conscious." In the chronic and incurable infections, periods should be lengthened between treatments and, without deceptive intent, the patient should be taught to accept his invalidism with equanimity and with a minimum of attention to the prostate.

Summary

1. Chronic prostatitis is not, of necessity, a venereal disease.

2. Exciting factors are local congestion from sexual excess or abuses, chronic constipation, and dietary indiscretions, and metastatic infection from acute infectious diseases or foci of infection elsewhere in the body.

3. Chronic prostatitis is divided into three types; catarrhal, parenchymatous, and interstitial.

4. Symptoms and signs are manifested in both the sexual (genital) and urinary systems.

5. Diagnosis depends upon; (1) rectal palpation, (2) repeated urinalyses, (3) microscopic study of prostatic secretion, and (4) urethros-copic examination.

6. Treatment consists of prostatic massage, urethral dilations, local treatment of strictures in the prostatic urethra, antiseptics by mouth, elimination of foci of infection and finally, psychotherapy.

A Soldier and The News and Courier

Next month will be the seventy-fifth anniversary of Captain Francis W. Dawson's coming into the family of The News and Courier. His is the story of a Briton who brought us aid, another of that great clan who do not give up in adversity.

The News and Courier wishes at this time and on this anniversary to recall this Englishman was willing to relinquish his family in order to fight for the South, and then, in defeat, to abandon his native country forever to help rebuild a stricken area.

Captain Dawson's life and works are of romance and powerful action. He came to the Confederate states as a sailor when there was no other way to get to the fighting South. Once here, he sought the thick of the battle, was thrice wounded and once captured.

From war he came to Charleston in the midst of the Reconstruction conflict, carpetbag and negro rule; then Hampton and '76 followed, and the earthquake and Tillman upheaval. He found time for quieter things, to lead in the movement to bring the mills to the cotton, to sponsor the reintroduction of tobacco in South Carolina, to serve eight years on the Democratic national committee, to sway the votes that gave Grover Cleveland the nomination, to organize the South Carolina Press Association.

Captain Dawson and his associates healed the wounds of two battered newspapers. The Courier and The News, welded them together and introduced modern journalism into South Carolina.

Today some of The News and Courier family are on English soil, fighting, as Captain Dawson did, for a cause.

The News and Courier - -

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NON REP

Physicians face winter and its companion, respiratory disease, with far less fear than they did several years ago. The sulfonamides have come to stay. So accustomed is the physician to prescribing one of this group of drugs that the B. S. (Before Sulfonamide) era seems almost a part of the middle ages.

That the advent of the sulfonamides has been one of the great boons to man in his fight against diseases is a statement which no sensible man will refute. And yet it must be borne in mind that occasionally these drugs destroy instead of aiding the individual who takes them. This fact was strikingly demonstrated in a splendid article which appeared in this Journal last month (written by William H. Kelley and M. W. Colgin of Charleston). To quote from their timely study, "Sulfonamide drugs have fortunately proved relatively safe in general use. Although untoward side effects of one type or another are observed in the majority receiving these preparations, few are of serious consequence and according to the literature they have seldom led to death. None the less from the preventive medical viewpoint, fatalities attributed to these drugs though infrequent are of considerable interest. Furthermore, there is reason to believe that these toxic drug reactions act as contributory causes of death more often than is generally appreciated."

It is our belief that the use of the sulfonamides by the careful physician who watches his patient is a safe procedure. An occasional tragic reaction may occur but so far no one has shown how this may be avoided.

The place in which the drugs may be of real harm and of actual danger, however, is in the field of self-medication. Many of the laity have heard so much of the drugs or have seen their actions demonstrated upon members of their families or upon their own bodies to such satisfaction that they feel themselves authorities upon the subject, "When and how should the sulfonamides be used." They do not hesitate to call for these tablets at the drug store and to give them freely to their wives or children, or to take them themselves. And all too frequently they will secure these drugs by simply saying to the druggist, "Please refill that prescription for sulfa—which my doctor gave me recently."

To protect his patients and to safeguard his own interests, each physician would do well to write on every prescription for one of the sulfonamides, *Noñ Rep* (Do not refill). In this way, the physician clears his own skirts, he protects his patient and lets him know that the drug is not one to be considered lightly, and he helps that ethical druggist who does not like to dispense potentially dangerous drugs without the backing of his doctor, even though there is no law on the statute books which bids him nay.

HOW ARE YOU VOTING?

There are elections ahead which are of great importance to all physicians—we refer to the elections of officers of the County Medical Societies and of delegates to the next annual meeting of the House of Delegates.

Some great and fundamental change in medical practice is awaiting us just around the corner. When that change comes, let us earnestly hope that it will be built around the medical organization in existence today. And at the foundation of medical organization is the county medical society.

What physicians are in the best position to serve with the armed forces, which physicians are truly essential in their present fields of endeavor, which physicians are available for transportation to industrial or other communities where the lack of medical care is appalling, how best may the physicians who are left at home carry on the tremendous amount of work which faces them, in what ways may the public health services of the state and county and city help physicians in the task ahead? These are but a few of the questions which are to be answered, and who can answer them better than the local county medical societies?

No state medical association can be stronger than its individual county medical societies nor than the composite of those men who compose its House of Delegates.

It will not be long before each county medical society will hold its elections for the coming year. Each society would do well to consider, carefully and well, its choices for 1943. Seniority, sentiment, personal obligations, petty jealousies, local medical politics — these must be thrown to the winds and every effort must be made to elect that president who will be a real leader, that secretary who will be willing to do the all important work of that office with diligence and efficiency, and those delegates who will be anxious and ready to devote time and effort toward the shaping of policies for the good of our state medical association.

How are you voting? We sincerely hope that you will vote according to the dictates of your intelligence and of your conscience. If you do, we will at least have gained the first skirmish in the battle which lies ahead.

TO COUNTY SOCIETY SECRETARIES

Will all county society secretaries send to the Secretary-Editor immediately the names of all physicians who have gone into military service within the last two months, and continue to send in the names as men are called. It is imperative that our state office records be kept up to date.

HOW TO HELP YOUR DOCTOR

Many doctors are now on duty with the armed forces and indications are that many more will be called to service. As a result, the physicians who stay at home are forced to tackle a job which will tax their abilities and strength to the utmost.

Those who wish to help physicians carry this load should put into practice the suggestions listed below:

1. *See you doctor in his office* whenever possible and save him the time which is consumed in traveling to and from your home.

2. If you plan to see him in his office, *make your appointment ahead of time* if you can, and then *be on time* for your appointment. He will see you as promptly as he can.

3. If you want him to see a patient in your home, make your request *as early in the day as possible* so that he may arrange his calls to conserve time and travel.

4. When seeing your doctor, *make your conversation brief* and to the point. Remember that other people are waiting to see him and to talk to him.

5. See that your house is *well marked* so that the doctor will not waste time finding your residence. If you call him at night, turn on your *porch light* so that he can find your house with ease.

6. *Avoid calling your doctor on Sundays* except for serious or emergency illness. Give him time to rest and enjoy his family.

7. When you call him on the *telephone*, plan what you have to say and make your conversation *brief*. If possible, get the information which you desire from his secretary.

8. Avoid requesting home calls for *minor ailments*, particularly at night. Doctors need sleep as do others.

9. *Do not criticize your doctor* and promote dissatisfaction among his patients. He is over-worked but he is doing the best he can.

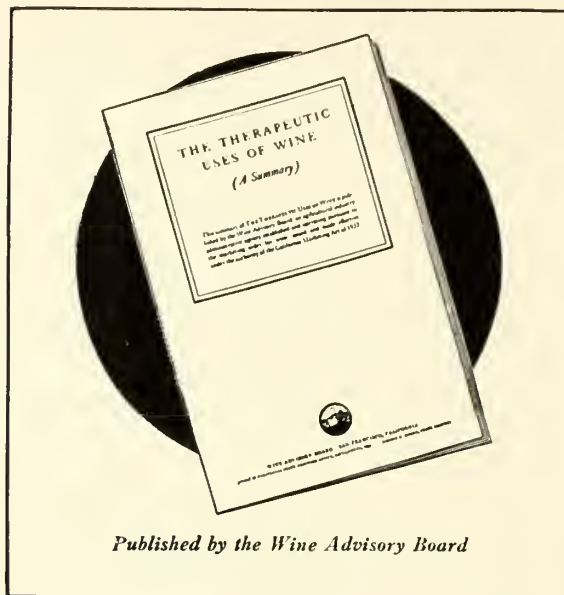
10. *Be patient*. So long as the war continues every practicing physician will have far more work to do than he has ever done before, but he is still human, and can do only so much in a given length of time.

A copy of the above statement has been mailed to every member of the Association. Copies may be obtained from the Secretary, postage paid, at the following prices:

Small card (3½ x 6)	\$1.00 per 200
	\$2.00 per 500
	\$3.50 per 1,000
Large card (11 x 14)	10 cents each

As of November 5, the Secretary has received orders from physicians of the state for 30,000 of the small cards and 150 of the large cards.

It is suggested that physicians enclose one of the smaller cards with their monthly bills, give them to their patients, or have their druggist send one out with each prescription filled. The large cards may be hung in the physician's office or in the drug stores.



THE THERAPEUTIC USES OF WINE

(mailed free upon request)

There has developed an interest within the medical profession that the true physiologic and therapeutic uses and deficiencies (and also the food values) of wine be authoritatively reviewed. Such a review has been prepared in monograph form by qualified and competent medical authorities and constitutes a summary of the pertinent scientific literature of present-day medicine.

The contents include sections on wine as a food, and the actions of wine on the gastro-intestinal system, the cardio-vascular system, the genito-urinary system, the nervous system and the muscles, and the respiratory system. The uses of wine in diabetes mellitus, in acute infectious diseases and in treatment of the aged and convalescent are also discussed. The value of wine as a vehicle for medication is dealt with, and an important section on the contraindications to the use of wine is included. An extensive bibliography is presented for those who may wish to pursue the subject further.

This review results from a study supported by the Wine Advisory Board, an agricultural industry administrative agency established under the California Marketing Act, and has been sponsored by the Society of Medical Friends of Wine.

Members of the medical profession are invited to write for this monograph. Requests should be made to the Wine Advisory Board, 85 Second Street, San Francisco.



AROUND THE STATE

Effort will be made to secure and publish news concerning the activities of individual physicians, and of the various medical societies of the state. Members of the Association, and especially secretaries of county societies, are urged to send in news items to the Editor.

Deaths

Dr. Julius C. Sosnowski, a former member of the Medical Society of South Carolina, died at his home on Wadmalaw Island this summer. Dr. Sosnowski had lived out West for a number of years, returning to South Carolina two years ago.

Dr. Daniel F. Moorer, 91, died at his home in St. George on October 11. A graduate of the Medical College of the State of South Carolina, Dr. Moorer practiced medicine in Dorchester County for a number of years but was forced to retire from active practice on account of his health over twenty years ago. He is survived by two sons.

Dr. W. M. Brockinton, 76, died at his home in Manning on October 16. He practiced medicine in Manning for fifty years and retired six years ago. He was a graduate of the Medical College of the State of South Carolina. Dr. Brockinton is survived by his wife and two daughters.

News Items

The following physicians have recently reported for military duty: H. M. Allison of Greenville, A. M. Brailsford of Camden, R. B. Bultman of Sumter, Norman O. Eaddy of Sumter, James O'Hear of Charleston, F. G. Shaw of Camden, R. M. Walker of Sumter, A. B. Whitaker of Camden, J. K. Webb of Great Falls, W. E. Baldwin of Walhalla, J. W. McLean of Greenville.

Lieut. Col. George Benet has been made commanding officer of the station hospital at Carlisle Barracks, Pa. This is quite an honor as this is one of the larger permanent posts in the country.

Dr. O. B. Chamberlain passed through Charleston recently on his way to permanent assignment in Utah.

Two South Carolina physicians now hold important positions with the 92nd General Hospital, Camp Bowie, Texas. Major Lawrence P. Thackston is Chief of the Surgical Service and Major Hugh Smith is Chief of the Medical Service. Dr. Thackston was formerly a urologist in Orangeburg and Dr. Hugh Smith an internist in Greenville. Both of them were members of the Council before entering service.

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Society News

During September the Greenville County Medical Society met in joint session with the Greenville County Druggists' Association. Papers were presented by John Fewell, M.D. and P. S. McCullom, Phar.D. Dr. T. B. Reeves was elected to serve as President-elect to succeed Dr. J. W. McLean who has reported for active duty. At the October meeting the program was in charge of members of the faculty of the Medical College of the State of South Carolina. Professor J. J. Ravenel discussed **Some Problems in Urology** and Dr. J. A. Boone presented a paper on **Estimation of Renal Function in Cardiac Failure**.

The October meeting of the Medical Society of South Carolina (Charleston) was addressed by Dr. William H. Prioleau on the subject, **The Treatment of Thyroid Abscess Causing Tracheal Obstruction**. This Society has recently received a bequest from the estate of the late Miss Edith Flora Bassett of Charleston.

Dr. Kenneth M. Lynch of Charleston was the guest speaker at the October meeting of the Columbia Medical Society and his subject was **Abnormal Chorionic Growth**. Dr. A. T. Moore also presented a paper on **Metal Hip Joint**.

Medical College News

Dr. Rhett G. Harris, instructor in Bacteriology, resigned from the department in April to join the armed forces as 1st Lieutenant in the Sanitary Corps. He is now stationed at Jefferson Barracks, Mo. Dr. Raymond M. Young arrived to replace Dr. Harris on June 22, 1942.

The 49th session of the School of Pharmacy opened Oct. 5th. Dr. William A. Prout has been named acting director of the school and will continue as professor of operative pharmacy. He announced that whereas, formerly, the first-year students were trained at the medical college, now the plans call for all four

years' training at the school of pharmacy.

Dr. Robert Walton, formerly a member of the faculty of the medical college of the University of Mississippi, has been elected professor of pharmacy to succeed Dr. W. H. Zeigler who died during the summer.

Dr. John Arthur Siegling, orthopedic surgeon, after several years' residence in Illinois where he was in charge of the department of bone and joint surgery at the Carle Clinic at Urbana, has returned to Charleston to practice. He will be on the faculty of the medical college in orthopedic surgery.

Dr. L. T. Belkin, formerly of the Yale University School of Medicine, has been appointed as an instructor in the school of pharmacy and Dr. W. G. Sink, formerly of the faculty of the Citadel, has been appointed to the chemistry department of the medical college.

South Carolina Medical Defense

Dr. H. G. Callison, Chief Medical Officer South Carolina Council for National Defense, has been working hard and diligently and we are glad to be able to publish a part of the report on his activities during the month of September.

During the month of September final approvals were received for allocations to establish blood plasma banks in four institutions of the State. Orders for equipment have been placed by each of those institutions and it is hoped that all will be in operation very soon. On September 21st inquiries were sent out to the hospitals of the State in an effort to ascertain the amount of plasma on hand and whether or not this plasma would be available from these non-grantee hospitals in the case of need. While this survey is not yet complete, it is gratifying to note that all hospitals which have begun processing blood indicate willingness to have it used by this organization in the case of an emergency. In those institutions approximately 500 units are available at this writing. Authorities of the McLeod Infirmary in Florence, South Carolina, have indicated the desire to apply for an allocation to establish a bank in that area.

A considerable amount of time has been given over to the work of establishing affiliated hospital units in the four institutions suggested. Already the Unit Directors have been selected by the Spartanburg General Hospital, the Greenville General Hospital, and the Columbia Hospital of Richland County, and the applications and physical examination blanks have been forwarded to the Regional Office. Very little headway has been made with the Medical College in Charleston. It appears that the authorities at the Medical College are not thoroughly convinced of the necessity of the formation of a unit there, since it is felt that the faculty, being organized as it is, could readily be activated in the case of need in that area. There also seems to be some hesitancy on the part of the College authorities in having members of the faculty commissioned, due to the fact that these men now are giving full time to the training of young physicians. However, this project has not been abandoned, and efforts will continue to be exerted looking to the establishment of a unit in Charleston. The McLeod Infirmary in Florence and members of the medical profession connected with the McLeod Infirmary and other institutions are vitally interested in establishing an affiliated hospital unit in that area of the State. Request for permission to establish such a unit has already been made through the Regional Office, and it is hoped that an invitation will be extended for the establishment of a unit in Florence.

It was necessary during the month to select and have appointed a new Local Chief of Emergency Medical Service for Orangeburg County, the former Chief of Emergency Medical Service in that county having been forced to resign on account of his health. One county in the State remains without a Local Chief of Emergency Medical Service, and efforts are being made to have a Chief appointed immediately. Four new Nurse Deputies have been appointed in the State to fill vacancies created by resignations; one vacancy still remains to be filled.

The following letter has been received from one of our members who is now stationed in Texas.

This is just an informal note to say hello, I miss you, wish I was back at work so I could worry you again with referred cases. You know what I mean: the army life is great, I have a nice place and am glad to do my little bit at this time, but it will be good to get back in the old ways when we finish this job.

I cannot tell you how big this place is, however, it is a clean new place, just a little over a year old, still growing and is in the many thousands now. The hospital wards cover many acres alone.

For the first two weeks I was in the dispensaries, then I got a break and was sent to the Flight Surgeon's office to learn the set up so that I could be sent to Randolph Field to take the special course and become a Flight Surgeon. But after two and a half months work in the Flight Surgeon's office the Commanding Officer called me in and asked my age. When he found I was forty years old, he sadly (to me) informed me that he had just received orders to send no one over thirty-six to Randolph Field. It's hell to be considered too old for a job! He did promise me, however, that if the restrictions were ever changed, he would give me a place there. So, maybe to appease me for the disappointment, he placed me in charge of the Basic Training Center dispensaries where I have six medical officers with which to run the place. So

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Literature furnished on request

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now I am a glorified executive and can work in my several buildings as I choose. We run hundreds through the morning sick call and the afternoon sick call. All admissions have to be seen first in the dispensaries so my department has plenty to do at all times.

By the way, a funny thing happened the other day here. An Indian, about forty years old was giving a lieutenant some trouble. The lieutenant reported it to his captain who said he would straighten the Indian out. When the Indian was brought up, the Captain barked out, "What's the matter with you soldier." The Indian just shrugged his shoulders and said nothing. After a few minutes the captain got mad, and started berating him. Still no response. After a while he shouted "Speak up dammit, what's the matter with you." You could clearly see the Indian was disgusted with the whole affair, the army in general, he was completely "fed up" with it all. Slowly he jabbed the ground with his toe, looked at the captain, and said, "Hell! Walk, walk, talk, talk, talk, hell! Me shoot Japs!"

I have found the Medical Officers here a fine bunch of men, socially and medically. There's not a one in the place I don't like, it's just one happy family here. Several leave each month for foreign duty and we all envy them, hoping we will be the ones to go next. They notify you sometimes only in time to pack and catch the next plane or train. Some of my friends here are now in Australia, Alaska, Ireland, and one is in South Africa. Wonder where the devil I will end up?

I am enjoying the Journal. It is being forwarded to me here.

Please give my regards to my friends in Florence, and with kindest personal regards to you and yours. I am,

Presentation of the coveted Army-Navy "E" Pennant to E. R. Squibb and Sons was witnessed by more than 2,000 employees in the grand ballroom of the Waldorf-Astoria Hotel, New York City, on Friday night, September 18th. The pennant was presented by Rear Admiral Harold W. Smith, (MC) USN, Chief of the Navy's Research Division of Bureau of Medicine and Surgery, to Carleton H. Palmer, Chairman of the Squibb board.

With the pennant went insignia of excellence to each of the employees of the company which manufactures critical drugs, biologics, and other medical essentials for the armed forces. Brig. General Larry B. McAfee, Assistant to the Surgeon General of the United States Army, presented token "E" buttons to four employees—three women and one man—selected from four Squibb departments in which service entails personal hardship and risk of health and even life in supplying of medical needs for the Army and Navy.

One of the pin recipients was Miss Anna Masterson, employed in the manufacture of anti-typhus vaccine.

"Not one Squibb worker engaged in this perilous occupation escapes the typhus infection," declared General McAfee in giving Miss Masterson her button. "To some degree or other—each becomes ill—distressingly ill—may even die. They face this distress—this peril, to protect others."

Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

CASE OF DR. W. H. KELLEY ABSTRACT NO. 464

Student Leslie (Presenting):

History: This patient was first admitted to hospital on June 10th, 1933, when 15 years of age. He had been well until two weeks prior to admission when he developed a cough productive of a foul, thick, yellow sputum. A few days later he developed hemoptysis and later vomited dark blood several times. He noticed a sharp stabbing pain in his left lower chest which was worse on deep inspiration. Lost about 15 lbs. in weight. Physical findings of note limited to chest. Diminished excursion of the chest on the left. There was slight impairment of resonance over the left apex and moist rales over the left lung. Tubular type of breathing over the left upper lobe. Temperature 102 on admission and continued elevated for several days slowly dropping to normal. He had frequent low grade elevation of temperature during hospital course. Total WBC, 17,000 with 74% Polys. Sputum negative for Tbc. on several occasions. Treatment was symptomatic and the patient gradually improved being discharged on August 22, 1933.

Admitted again on April 24, 1938, for tonsillectomy and adenoidectomy because of frequent sore throats, hoarseness and dysphagia. The physical examination was negative except for enlarged tonsils. His post-operative course was uneventful and he was discharged on April 26, 1938, in good condition.

He remained in good health until June, 1941, at which time hemoptysis began again and he was admitted to Pinehaven Sanatorium where he remained until December, 1941. He then felt well until February, 1942, when he again noticed hemoptysis producing large amounts of bright red blood and was re-admitted to the hospital.

Had always been subject to frequent respiratory infection and had pneumonia three times, last in 1929. Family history negative. No tuberculous contacts and no history of working with asbestos.

Physical Examination: Revealed a well nourished and developed 23 year old colored man, who appeared to be acutely ill. Temperature 100, pulse 100, respiration 28. Head and neck: normal except for fresh blood in mouth and pharynx. No signs of focus of bleeding. Trachea in midline. Skin: normal. Lungs: moist bubbling rales in upper half of left lung field. Amphoric breathing at angle of left scapula posteriorly. Percussion note and fremitus unchanged. Cardio-vascular; heart not enlarged. Sounds of good quality, no murmurs. Blood pressure 124/76. Abdomen: protuberant. No tenderness

or masses palpated. Reflexes: physiological.

Laboratory Examination:

Urinalysis: negative.

Blood:	2-22-42	2-24-42
RBC	5,465,000	4,800,000
WBC	19,450	29,350
Hb.	12	9.5
Polys.	77%	72%
Lymph.	17%	15%
Monos.	4%	12%
Eos.	2%	1%

Blood Culture: Negative. Wassermann: negative.

Prothrombin activity: Normal.

Sputum:

1. Did not type out.
2. Culture non-hem. strept.
3. Negative for tubercle bacilli three times.

Hospital Course: He ran a continuous febrile course with temperature to 104. He coughed up large amount of bright blood mixed with foul-smelling sputum. Treatment consisted of sulfathiazole, Vitamin K, blood transfusions and sedation. Nevertheless his condition became steadily worse. He gradually lapsed into a coma, respiration became rapid and stertorous and he died four days after admission.

Dr. Kelley (conducting): Mr. Woodruff, what do you make of this man's case?

Student Woodruff: I think that he most likely had bronchiectasis with a lung abscess. He apparently had three previous attacks of pneumonia and this would be the background for the bronchiectasis. I think that the abscess had already developed on his first admission to the hospital as there were symptoms and physical signs of such a condition at that time. The foul smelling sputum, cough, hemoptysis and vomiting of dark blood, which he had undoubtedly swallowed, are all indicative of an abscess and also of bronchiectasis. The hemoptysis occurs in 50% of the cases of lung abscess and bronchiectasis. The amphoric breathing over the upper portion of the left lung is the most indicative finding in the physical examination, as such breathing is present only when there has been destruction of lung tissue with cavitation such as would occur with bronchiectasis and abscess.

He apparently died from hemorrhage of the lung. Tuberculosis has to be ruled out which cannot be definitely done from the data we have. X-ray films would be very helpful.

Dr. Kelley: I do not quite follow your thoughts about bronchiectasis and lung abscess. You seem to say them both in one breath.

Student Woodruff: Well, I think he had both.
Dr. Kelley: Why bronchiectasis?

Student Woodruff: The foul smelling sputum, hemoptysis and physical findings all point to bronchiectasis.

Dr. Kelley: What is your conception of bronchiectasis as a process?

Student Woodruff: It conveys a picture of dilated bronchi with an accompanying chronic inflammatory reaction.

Dr. Kelley: Does it necessarily include the inflammatory reaction?

Student Woodruff: Yes, you would generally find it.

Dr. Kelley: As a matter of fact the word means dilatation of bronchi and it is not proper to use it to describe infection. It is itself a result of an inflammatory process. Where is the most frequent situation in which one encounters bronchiectasis?

Student Woodruff: In the left lower lobe.

Dr. Kelley: Well, in either lower lobe is probably a safer statement. What infections usually predispose of this condition?

Student Woodruff: Respiratory infections are the most common causes, especially pneumonia.

Dr. Kelley: What kind of pneumonia, that is, what etiologic agents are usually responsible?

Student Woodruff: Staphylococci and streptococci.

Dr. Kelley: Mr. Ward, does your analysis of the case agree with Mr. Woodruff's?

Student Ward: Well, I agree with practically everything he has said. I think the bronchiectatic process had begun before his first admission to the hospital in 1933. History of previous attacks of pneumonia and frequent respiratory infections certainly suggest the background for bronchiectasis. It would be interesting to know if he had had measles or whooping cough, as the bronchial infection that frequently accompanies these diseases often lead to bronchiectasis.

Dr. Kelley: Why should he cough up blood?

Student Ward: The chronic infection which often accompanies bronchiectasis may cause erosion of the mucous membrane linings with exuberant granulation tissue which may cause bleeding, either from the primary erosion or from the highly vascular granulating surface. Of course, I would like to have a guinea pig inoculation and X-ray before ruling out tuberculosis completely.

Dr. Kelley: We have some X-rays here. Mr. Wyman, would you interpret these for us?

Student Wyman: The plate taken in 1933 shows some increase in density in the left upper lobe and the bronchial markings are prominent throughout lungs. This next radiograph with cephalad shows definite evidence of bronchiectasis in both lower lobes with cloudy infiltration in the middle part of the left lung.

Dr. Kelley: Can you exclude the possibility that

this man just had a series of ordinary lung abscesses?

Student Wyman: No, I cannot, but the symptoms could have been due to bronchiectasis alone. He also probably had an abscess, either as a forerunner of the bronchiectasis or as a complication after the bronchiectasis was established.

Dr. Kelley: We felt that this man has a more serious infection that you did. There is no question that he must have an acute fulminating infection of the lungs terminally, rather than just bronchiectasis.

Dr. Lynch (demonstrating lungs): The students did better than the staff did in this case and probably better than I would have done. The man was acutely ill and everything was indicative of a destructive lesion in the lung with marked systemic reaction. In the lower lobe of the left lung there is a big gangrenous abscess filled with blood clot and necrotic tissue which had destroyed practically the entire lower portion of this lobe. In the upper lobe of the same lung you see an irregular trabeculated saccular structure about 4 cm. in diameter which has a heavy fibrous wall and communicates directly with several of the large bronchi in that region. Presume that this is where he had his first abscess and you have the background for the saccular bronchiectasis which is present now. This bronchiectatic cavity was most likely responsible for the gangrenous abscess. Some plug of infected material was aspirated into the lower lobe and set up the sequence of events which terminated in this death.

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BOOK REVIEWS

CLINICAL ANESTHESIA A manual of CLINICAL ANESTHESIOLOGY

By John S. Lundy, B.A., M.D.

This is very interesting and instructive book on clinical anesthesia. The author gives a most complete study of all anesthetic agents, their methods of administration, their assets and also their dangers. He discusses each anesthetic separately and in addition discusses the anesthetic of choice in relation to the operations on the various parts of the body. The book is attractively bound and arranged and very conveniently indexed.

This book should become a part of every doctor's library and it is so arranged that it can be used in military medicine as well as civil practice.

C. A. K.

PHARMACOPOEIA OF THE UNITED STATES

Mack Printing Co., Easton, Pa., 12th revision, 1942

Since 1820 the Pharmacopoeia has been a fountain of knowledge for the physician. This twelfth edition contains a collection of remedies and methods with which one could practice comfortably and efficiently without benefit of the innumerable costly proprietaries which are showered upon us from other sources.

No physician could fail to profit from a brief perusal of these numerous pages. He will find old friends which perhaps have been eclipsed by more gaudy but less accepted preparations, and he will miss a few which have fallen justly under the penetrating gaze of scientific scrutiny. If he clings to his Latin he will refresh his terminology and be more accurate in writing prescriptions which should please at least the pharmacists of the old school. He will find standards, methods, reagents, history and variety of things which will reward him well for a modest effort.

This is a work into which goes tremendous effort and care in revision, and most careful consideration in the inclusion of new remedies.

J. I. W.

THE PREVENTION OF DEFORMITY IN CHILDHOOD

R. B. Raney, Associate in Orthopedic Surgery, Duke University School of Medicine; National Society for Crippled Children, Elyria, Ohio. \$1.00

This book is in no sense a text-book. Rather, it is a primer, well written and splendidly illustrated,

presenting practical information concerning early measures for the prevention of deformities in children. The most common deformities of childhood are described in regional order, their common causes are listed, and their prevention is discussed. The illustrations—and they are all drawings from actual cases—tell even more in many instances than does the printed word. This is a handy book for the physician's desk where it may be used to explain a child's condition to the parents and family.

The medical profession and the hospitals of the nation will shortly be obliged to depend upon dealers' stocks of medical and hospital supplies if they are to maintain their present level of efficiency. The continued shortage of raw materials makes it increasingly evident that even the armed forces may have difficulty in securing their requirements. Stocks on the shelves of the dealers of this nation constitute the only reserve of medical and hospital equipment which may be available in the near future to meet civilian needs. The hoarding and dead storage of equipment and supplies for a possible emergency should, therefore, be discouraged. Any unexpected emergency could be met by our present civilian medical and hospital resources; continued disaster could only be met by the utilization of military stores which would be made available if there were urgent need.

Any surplus or obsolete equipment now in the possession of physicians and hospitals ought not to be dispersed at this time, because of the difficulty of replacement and the possibility that it may be needed for the establishment of emergency base hospitals.

MEDICAL OFFICERS NEEDED—TENNESSEE VALLEY AUTHORITY

The Tennessee Valley Authority is in urgent need of medical officers who are not eligible for military service and who are willing to accept assignments to war industrial activities (construction, manufacture of war chemicals, and manufacture of hydroelectric power) as their participation in the all out war effort. Responsibilities include physical examinations, industrial hygiene, care of injuries, medical care to families in remote construction areas, and general public health responsibilities in construction camps and villages. Salary ranges from \$3200 to \$4200 per annum with opportunity for promotion. For further information write to Dr. E. L. Bishop, Director of Health, Tennessee Valley Authority, Chattanooga, Tennessee, or to the Personnel Department, Tennessee Valley Authority, Knoxville, Tennessee.

RED CROSS BLOOD DONOR SERVICE RECEIVES ARMY-NAVY "E"

The Army-Navy "E" has been awarded the American Red Cross Blood Donor Service in recognition of its achievement in collecting blood for the nation's armed forces. Presentation of this coveted award occurred September 15 at impressive ceremonies on the steps of Red Cross National Headquarters in Washington.

Accepting the pennant, Red Cross Chairman, Norman H. Davis dedicated it to the thousands of men and women whose donations enabled the Red Cross to provide a total of 461,493 pints of blood by June 30 last. This number was 81,493 pints more than had been requested for delivery at that time.

Although the award was presented officially by Major General James C. Magee and Rear Admiral Ross T. McIntire, Surgeons General of the Army and Navy, as well as other important officials, actual presentation of the pennant was made by Samuel Kurtz, torpedoman who lost both legs when the U. S. S. Kearny was torpedoed the night of October 16, 1941. Torpedoman Kurtz received 12 transfusions, three of them with plasma that was flown from shore by a Navy patrol plane, as the Kearny did not have any aboard. In all probability, these transfusions saved Kurtz's life.

"Being able to present this award is more than just a personal thing to me," Torpedoman Kurtz said in presenting the pennant. "The Red Cross Blood Donor Service is important. It doesn't concern only one soldier or bluejacket or marine—it's a help—a life-saver—for all of them. I don't have the right words—and I don't know how to say—thanks for my life. But the gratitude I do have is in my heart. I know that I speak the truth when I say that every man in the service is thankful to the people for what they're doing."

"I am proud to accept this honor, not only on behalf of the Red Cross, but in the name of 700,000 Americans whose generous gifts have made it possible," Chairman Davis said in reply. "The Blood Donor Service is a vivid illustration of the fact that the American Red Cross is the American people. The Red Cross is strong—it is well prepared for the many wartime services bestowed upon it by the government because the people—the husbands and wives—the executives and laborers, have made it strong."

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PRACTITIONER'S PAGE

This page is devoted to the everyday problems of the physician in practice. Members of the Association are urged to suggest subjects for articles which they desire discussed. Members are also urged to submit questions. Each question will be referred to some physician who is qualified to make answer, and if the question involves a subject of general interest, the answer will be printed.

VITAMINS AND GREY HAIR

Roe E. Remington, Ph.D., D.Sc.

Professor of Nutrition

Medical College of the State of South Carolina

Investigators have known for some years that laboratory animals restricted in their supply of vitamins of the B complex to the point that growth was interfered with, frequently lost much of their fur (alopecia) but that if they did not die many of them would grow a new pelt with the difference that if the original fur had been pigmented (black) the new growth would be grey and deficient in pigment (achromotricia). If an extract of yeast is precipitated by alcohol, treated with fuller's earth and other reagents so as to remove all of the better known vitamins from it, there remains a filtrate which still contains some substance or substances necessary for growth and well-being of laboratory animals. If deprived of this filtrate factor but supplied with the vitamins previously removed, they would fail to grow and suffer from loss of fur and greying of fur. Among the substances present in this filtrate which may be of nutritional significance are pantothenic acid, inositol, p-amino benzoic acid, and biotin.

Is there a grey hair vitamin? Hair pigment is due to a substance known as melanin which is manufactured in the cells of the skin. Grey hair results from deficient melanin synthesis. Each of the substances mentioned in the preceding paragraph has been reported by researchers as being able to cure nutritional achromotricia in rats, but in each case other workers have failed to confirm the observation. A few cases of cure of human achromotricia

by one or another of these substances have also been reported, but such reports are inconclusive because it is impossible to keep people on an unvaried deficient diet long enough to assure that the result is due to the medication alone.

Outstanding among the sequelae of deficiency of several of the B vitamins (as niacin or riboflavin) are manifestations of impaired nutrition of the skin of one form or another. It might be expected that one result of such impaired nutrition, from whatever cause, would be deficient melanin formation, and as we have pointed out in previous articles of this series, wherever symptoms of lack of one of the vitamins of this group appear, lack of the others may be assured to also occur. That is to say, although there may be a specific achromotricia vitamin, it is not necessary to postulate its existence in order to explain greying of hair. The writer has seen in the clinic of Dr. Tom Spies a pellagrin whose hair had become white, and in whom complete restoration of color followed the recovery from pellagra on medication with thiamin and niacin plus improvement in diet.

It is highly improbable that grey hair due to nutritional deficiency will ever be observed unless preceded by other clearly marked symptoms of deficiency of one or more of the well known vitamins of the B complex. Nevertheless many people do turn grey with advancing years as natural metabolic processes slow up. The interest of such persons in a grey hair vitamin, if such exists, is a cosmetic one. Suggesting or prescribing salts of pantothenic acid or p-amino benzoic acid in such cases is speculative experimentation.

AN OPEN LETTER

CHIEF OF GASOLINE RATIONING APPEALS TO PHYSICIANS OF U. S.

An open letter to all physicians of the United States from the chief of the Gasoline Rationing Branch, Office of Price Administration, concerning the vital role they will play in the rationing of gasoline and tires, is published in the Medicine and the War section of *The Journal of the American Medical Association* for October 31. The letter is as follows:

"In the East Coast Gasoline Rationing program, made necessary by the shortage of transportation facilities for petroleum products, the indispensability of your profession was recognized by its inclusion in the categories of person eligible for preferred mileage, that is, necessary occupational mileage in excess of 470 miles a month. Now the Office of Price Administration has been ordered by Mr. William Jeffers to institute and administer a nationwide mileage rationing program for the express purpose of conserving our rubber-borne transportation. In framing the Regulations for the new program, your profession was one of the first to be provided for.

"If we are to carry out our double task of preventing a collapse of our military and civilian transportation, we must have the complete cooperation of those groups of persons whose driving is deemed essential to the war effort. Our immediate aim is to attain the 5,000 mile national mileage average set by the Baruch Report as the maximum possible in light of the dire rubber shortage. Our experience with the East Coast program tells us that the preferred categories use one half of the gasoline consumed, though they constitute less than one fourth of the total number of automobile operators. Clearly, then, the great savings of rubber on a nationwide scale must be made in the preferred categories.

"Under the Regulations, governing the mileage rationing program, physicians are eligible for preferred mileage if their essential occupational needs exceed 470 miles a month and if the mileage is needed for regularly rendering necessary professional services. Mileage traveled daily or periodically between home or lodging and a fixed place of work is not considered preferred. Physicians who conduct their practices in offices, as many specialists do, are not eligible for preferred mileage.

"Without question or hesitation, doctors have been and will be granted all the gasoline needed to carry out their professional work. We hope that they will regard their concrete symbol of their indispensability, the C book, as a moral obligation and not as a personal privilege. From another point of view, the C book is part of a doctor's equipment; it should

not be used for anything but the work of humanity.

"When nationwide gasoline rationing begins, there are certain concrete things a doctor can do to live up to the high ethical standards set for him by his own profession:

"1. At the time of first issuance of rations, he can so carefully compute his necessary mileage as to make a B book adequate for his purposes though he might easily make out a case for a C book, which might be granted to him without question by his local War Price and Rationing Board eager to provide for physicians.

"2. In the computation of his mileage, he can religiously adhere to the provision of the Regulations, which makes 150 miles of his basic ration available for occupational purposes. Moreover, he can help mightily in establishing the principles that only 90 miles of the basic ration are to be used for home necessary use and that there is no provision whatever in any ration for 'pleasure driving.'

"3. Conversely, if he should be granted a C book, he can return to the local board, at the end of the three months period, all unused coupons accruing to him as a result of a quite natural overestimation of needs or of overgenerous 'tailoring' by his board, instead of using such coupons for nonessential purposes. The moral effect of such an act on his fellow citizens will be incalculable.

"4. He can set an example by scrupulously observing the 35 mile speed limit, except in cases of emergency, in spite of the fact that doctors could easily 'get away with it.'

"5. Should he be assigned to a hospital, clinic or institution after a ration card for calling on his private practice has been issued, he can use public means of transportation at the price of personal inconvenience.

"6. He can refrain from any kind of driving whatever which might appear to be nonessential in the eyes of the public.

"Doctors are the leaders and molders of public opinion in their communities. If the average man has any reason to believe that the professional men whom he regards with great respect are indifferent or hostile to the mileage rationing program, it will be difficult, if not impossible, to make it effective. Conversely, if doctors as a group observe the letter and spirit of the Regulations, they will be a powerful force in making this absolutely mandatory war measure serve its purpose. We know that we can rely on the support of your profession, which has demonstrated its patriotism, ability and unselfishness at every opportunity.

"JOHN R. RICHARDS,

"Chief Gasoline Rationing Branch, Office of Price Administration."

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PRESIDENT'S MESSAGE

The present state of world affairs makes it imperative that every woman find her field of service.

Our duty as the wives of physicians is to take as our slogan, "Health for Defense" and to miss no opportunity for leadership among other groups to which we belong.

As an organization we cannot affiliate with other groups, but as individuals we **must** insist upon more and better knowledge reaching more people.

We are asked to cooperate with the American Red Cross in their splendid Nurse's Aid, Home Nursing, and Nutrition courses, but let us not diversify our activities to the point where our influence as an organization is lost.

ELLEN D. PITTS

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AGAR AND THE WAR

The war has cut off importations of agar-agar, which normally come from Japan. The War Production Board has frozen all stocks of agar in order to protect the requirements for bacteriologic culture medium use of the Army, Navy and civilian hospitals and laboratories.

This W. P. B. control of agar made it necessary for Mead Johnson & Company to discontinue the manufacture of "Pectin-Agar in Dextri-Maltose," a product which has been used by the medical profession for the treatment of diarrhea in infants.

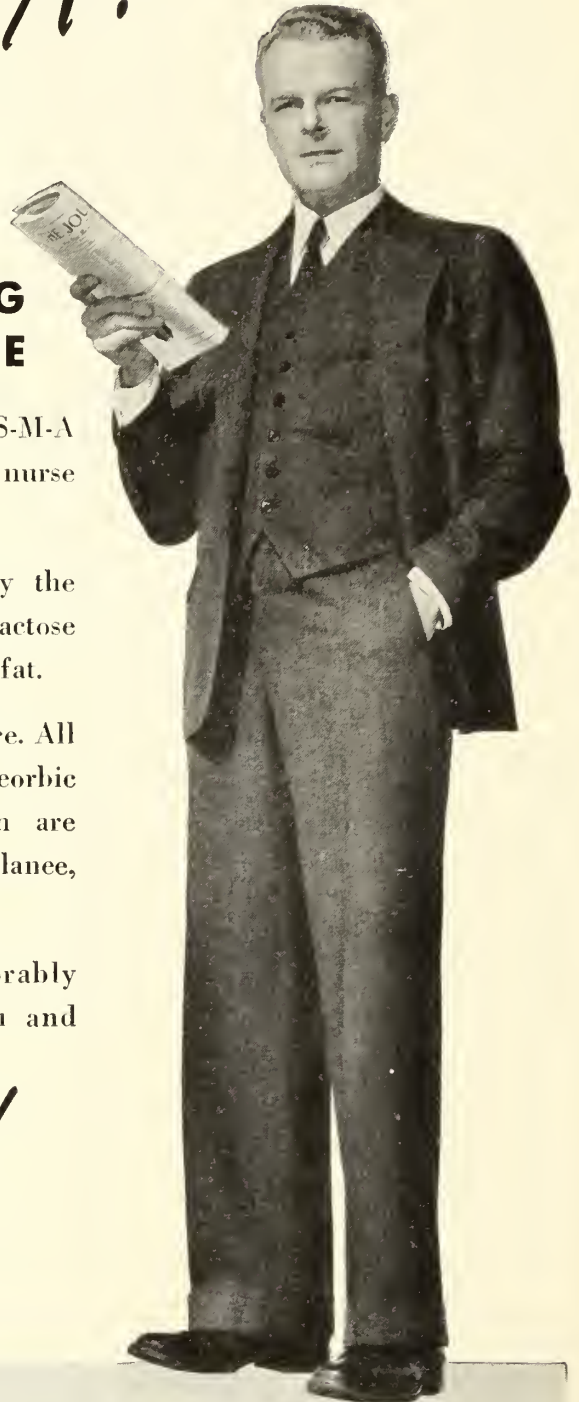
Fortunately, Mead Johnson & Company have another product, Casec, which gives good results for the same purpose. Physicians who are not familiar with Casec are invited to write for samples and descriptive literature to Mead Johnson & Company, Evansville, Indiana.

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Recent Advances in Chemotherapy

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BALTIMORE, MD.

I consider it a real privilege to be allowed to come down here to address you on a subject which to me is fascinating and which I know is of great general interest to physicians and surgeons alike.

It is difficult to believe that it is less than six years since the sulfonamide drugs were first introduced into this country for clinical trial. Such an amazing amount of work and literature has come out of this new form of chemotherapy; it is really appalling. You have seen new drugs synthesized, tested out in the laboratory, and later tried out on patients with great success in many cases. You have seen neo-prontosil, sulfanilamide, sulfapyridine, sulfathiazole, sulfaguanidine, and more recently sulfadiazine and succinyl sulfathiazole. With such a variety of drugs to choose from, it seems to me that the chief problem that confronts the physician today is the selection of the most effective drug for the treatment of a given infection. Therefore, I should like to discuss medical chemotherapy from this point of view in particular, and I think I can best do so by running over a few slides which describe different types of infection and the type of drug that we recommend for that particular condition.

Table 1: In the left column is the type of bacterial infection. SA stands for sulfanilamide, SD for sulfadiazine, SP for sulfapyridine, ST for sulfathiazole, and SG for sulfa-

guanidine; 4+ is the preferred drug, 3+ is second choice, 2+ is fairly active but not as good as the first two, 1+ is minor activity. If we have a zero, it means the drug has been tried and is ineffective and should not be used. If there is a blank, it means the drug has not been sufficiently tested to draw conclusions.

These tables were made up several months ago and there are a few modifications. I am not going into each disease individually, but pick out some of the more important ones.

This first table is concerned entirely with infections due to the beta hemolytic streptococcus, and you see right away that you have sulfadiazine given a 4+ rating all the way down. I am convinced that sulfadiazine is our drug of choice in the treatment of beta hemolytic streptococcus infections, with sulfanilamide definitely the second choice drug. When we come to meningitis, we have most convincing proof of the value of these drugs, because before we had the sulfonamide drugs the mortality rate in streptococcal meningitis was between 90 and 100 per cent. That mortality rate has dropped to between 15 and 25 per cent since these drugs have been introduced.

Erysipelas is the one condition, perhaps, where the drugs work most dramatically. That is understandable, because in erysipelas the streptococci are out in the tissues where they are readily attacked by the drug, so the response in the case of erysipelas is really astounding; usually within 48 hours the lesion is arrested and it clears up completely in a few days' time.

(Read before the annual meeting of the South Carolina Medical Association, May, 1942, Columbia, S. C.)

TABLE 1
AN ESTIMATE OF THE COMPARATIVE CLINICAL VALUE OF ORALLY ADMINISTERED SULFANILAMIDE, SULFAPYRIDINE, SULFATHIAZOLE, SULFADIAZINE OR SULFAGUANIDINE IN THE TREATMENT OF INFECTIONS

Disease Hemolytic Streptococcal Infections	SA	SD	SP	ST	SG
Tonsillitis and Pharyngitis	+++	++++	++	+	
Peritonsillar Abscess	++++	++++	++	+	
Ludwig's Angina	+++++	++++	++	+	
Acute Sinusitis	++++	++++	++	+	
Otitis Media	++++	++++	+	+	
Mastoiditis	++++	++++	++	+	
Meningitis	+++++	++++	++	0	
Erysipelas	++++	++++	++	+	
Scarlet Fever	++++	++++	++	+	
Adenitis	++++	++++	++	+	
Cellulitis	++++	++++	++	+	
Pneumonia	++++	++++	++	+	
Empyema	++++	++++	++	+	
Peritonitis	++++	++++	++	+	
Puerperal Sepsis	+++++	++++	++	+	
Septicemia	+++++	++++	++	+	
Osteomyelitis	++++	++++	++	+	
Ulcers	++++	++++	++	+	
Impetigo	++++	++++	++	+	
Miscellaneous	++++	++++	++	+	
++++ Preferred Drug	+	Minor Activity			
+++ Second Choice	0	Should not be used			
++ Active	Blank	Insufficient Data for Evaluation			

We recommend the use of sulfadiazine in scarlet fever, not that we can modify the toxic manifestations such as the rash, and so forth, but with the idea of cutting down on the streptococcal infection and particularly of reducing the incidence of complications, such as otitis, adenitis, et cetera.

In streptococcal pneumonia, sulfadiazine is the drug of choice; in streptococcal empyema, sulfadiazine again, but surgical drainage, that is, at least, aspiration of the chest as a rule is necessary in addition to chemotherapy.

In streptococcal peritonitis and puerperal sepsis (you recall that this is the condition where the value of these drugs was first reported in Germany and in England), there again the death rate has been cut down tremendously.

Table 2: Next we have a group of viridans streptococcal infections, and you note the results have been nowhere nearly so good.

You find sulfapyridine recommended for streptococcal viridans meningitis. Sulfadiazine

is showing some effect there, but has not been tested in enough cases to draw conclusions.

One condition for which we would all like to find a cure and for which we have no good drug is streptococcal viridans endocarditis. All the drugs are given a 1+ rating, but the results on the whole have been disappointing. The recovery rate has been about five out of 150 cases. That is probably better than the expected spontaneous recovery rate but it is not very good. However, because we have nothing else to offer these people at the present time, we feel that any patient with subacute bacterial endocarditis should be given a thorough trial, perhaps switching from one drug to the other if one is ineffective. The drug should be kept up for weeks or months if a favorable response seems to be taking place. You will see an occasional recovery.

We come now to a group of non-hemolytic streptococcal infections and anaerobic streptococcal infections. You notice a line of zeros across there, because all of the sulfonamide

TABLE 2

Viridans Streptococcal Infections	SA	SD	SP	ST	SG
Abscess	++		++	+	
Osteomyelitis	++		++	+	
Endocarditis	+	+	+	+	
Meningitis	++		++++	0	
Septicemia	++		++		
Non-Hemolytic Streptococcal Infections	0	0	0	0	
Anaerobic Streptococcal Infections	0	0	0	0	
Pneumococcal Infections					
Pneumonia	+	++++	++	+++	
Meningitis	+	++++	++++	0	
Peritonitis	+	++++	++++	+++	
Otitis Media	+	++++	++	++	
Mastoiditis	+	++++	++	++	
Sinusitis	+	++++	++	++	
Meningococcal Infections	++++	++	+++	0	
Brucella Infections	++	++	++	++	

drugs tried to date have failed to modify such infections at all. You are wasting your drugs and making your patient sicker, perhaps, by giving the drug when you have an infection with a non-hemolytic streptococcus or anerobic streptococcus.

Now we come to the pneumococcal infections. Here, of course, lobar pneumonia is the one disease where we have seen amazing results already. Once more you find sulfadiazine as the first choice drug. The reasons for that are these: It appears to be just as effective as sulfathiazole or sulfapyridine; it is more slowly excreted and, therefore, it is easier to maintain a good blood level with sulfadiazine than with sulfathiazole; it has much less toxicity than sulfapyridine and considerably less than sulfathiazole. For those reasons, we would recommend it as first choice drug for lobar pneumonia.

In meningitis due to pneumococcus, sulfapyridine is given a 4+ rating, mainly because sulfadiazine has not been tried in a sufficient number of cases. I believe sulfadiazine will come into its own there also, because sulfadiazine goes over into the spinal fluid in up to 60 to 75 per cent of the blood concentration and, therefore, effective spinal fluid level can be obtained.

I recently had the pleasure of seeing a pa-

tient with a pneumococcus Type III meningitis following sinus operation make a complete and rapid recovery on sodium sulfadiazine intravenously followed by sulfadiazine by mouth.

In otitis media, mastoiditis, sinusitis due to pneumococcus, we give sulfadiazine as first choice. Sulfathiazole is given a zero rating in meningitis. That may be subject to modification. Sulfathiazole has been shown to go over poorly into the spinal fluid and has not been recommended for treatment in any type of meningitis. However, recent studies show it has some effect in meningococcal infections.

We come to meningococcal infections and find sulfanilamide given first place, mainly because of the large number of cases treated. It is not necessary to give the drug intraspinally.

In Brucella infections (that is undulant fever) all of the drugs are given a 2+ rating. The results of drug therapy in these cases have been somewhat disappointing. We find that we can bring the temperature to normal very often and the patient feels better, but even though we keep the drug up for six weeks, after it is discontinued relapses have been common. Our present recommendation in treating undulant fever would run somewhat as follows: Start out with a full dosage of sulfadiazine or one of these other com-

TABLE 3

Gonococcal Infections	SA	SD	SP	ST	SG
Male Gonorrhea	+	++	+++	++++	
Female Gonorrhea	+++	++	++	++++	
Vulvo-vaginitis	++		++	++	
Arthritis	+		+++	++++	
Endocarditis	+++		++++		
Ophthalmia	+++		++++	++++	
Staphylococcal Infections					
Sepsis	+	+++	++	++++	
Pneumonia	+	+++	++	++++	
Carbuncle	+	+++	++	++++	
Meningitis	+	++	++	0	
Endocarditis	+				
Osteomyelitis		+++	++	++++	
E. Coli Tissue Infections	++	+++	++	++++	
Chancroid	++++		++++		
Typhoid Fever	0	0	0	0	
Paratyphoid Fever	0		0		
Gas Gangrene	++		++	++	
Tularemia	0		0	0	
Tuberculosis	0		0	0	
Influenzal Meningitis	+		++		
Friedlander's Infections	+	++++	+++	++	
Bacillary Dysentery				++	++++

pounds and keep up the dosage until the temperature is normal, then decreasing dosage for six weeks. If the patient relapses after the drug is discontinued, give the drug once more long enough to bring the temperature to normal again and follow with a course of intravenous injections of neo-arsphenamine which were reported to be beneficial by Wainwright some years ago and still seem to have some effect; in other words, neo-arsphenamine in these cases if the sulfonamides fail.

Table 3: Now we come to the gonococcal infections, and you will notice that sulfathiazole is given first choice rating in the majority of instances, in male gonorrhea, female gonorrhea, vulvogaginitis, arthritis, endocarditis and ophthalmia, with sulfapyridine given second place. The work with sulfadiazine in gonorrhea has not been sufficiently extensive to allow conclusions. It appears to be effective, but we feel safer in recommending sulfathiazole or sulfapyridine until we have results in a larger group of cases. The Army recommends today for treating male gonorrhea, sulfathiazole 3 gm. the first day and 2 gm. a day for the next 4 days. If the patient still has a dis-

charge at the end of the fifth day, sulfathiazole will be stopped and sulfapyridine started at once, 3 gm. the first day and again 2 gm. a day for from 5 to 10 days. If discharge is still present at the end of the tenth day after switching drugs, the recommendation is to stop chemotherapy and put the patient in a hospital for local therapy of one sort or another.

We never give any drugs over 15 days in gonorrhea for fear of serious toxic effects in patients who will be largely ambulatory and, therefore, not subject to close observation.

In staphylococcal infections, sulfathiazole is given first place rating: for example in sepsis, pneumonia, carbuncle; and sulfadiazine second place, and a very close second; in other words, the evidence is accumulating that sulfadiazine is just about as effective as sulfathiazole in staphylococcal infections. If that turns out to be true with more cases, sulfadiazine will become our drug of choice because of its lower toxicity.

In treating osteomyelitis due to the staphylococcus, treatment must be carried out over a prolonged period, and with these infections, the danger of relapse or metastatic infections

is very great, so the drug should be kept up from two to four or six weeks, depending upon the progress of the patient. It has been possible to treat a number of cases of osteomyelitis where no sequestrum has formed, with the drug alone, without surgery. However, a great many cases still require a combination of surgical drainage with chemotherapy.

Next a miscellaneous group of infections.

In bacillus coli tissue infections, sulfadiazine and sulfathiazole are rated about equally highly. In soft chancre or chancroid caused by the Ducrey bacillus, sulfanilamide and also sulfapyridine; the other drugs have not been given sufficient trial.

Typhoid and paratyphoid fever have not been influenced in any respect by any of these four drugs and, therefore, we cannot recommend them; in fact, they are contraindicated.

In gas gangrene, results have been encouraging although not entirely satisfactory.

Tularemia and tuberculosis, and we might add syphilis, are uninfluenced by the sulfonamide drugs and, therefore, there is no reason to use the drugs in these diseases.

Influenza bacillus meningitis, 2+ for sulfapyridine; it is still a difficult infection to treat.

Friedlander's bacillus pneumonia, which is one of the most fatal types of pneumonia, responds very well to sulfadiazine.

In bacillary dysentery, sulfathiazole shows some effect, but still more valuable is sulfaguanidine. A new compound, succinyl sulfathiazole, is being tested in these cases and may prove superior to sulfaguanidine.

Table 4: Next we have urinary tract infections. The important thing about treating urinary tract infections is to obtain a satisfactory concentration of free drug in the urine itself. As you know, most of the drug is excreted through the kidneys and about 50 percent of it will be in free form. Therefore, if we give 5 gm. of sulfanilamide per day to a patient who is putting out 1,000 cc. of urine a day, we can figure that when he gets in balance, he will have a urinary concentration of about 250 mg.% of free sulfanilamide, and that level has been effective in the majority of infections susceptible to this drug. Sulfathia-

zole is given a first place rating in bacillus coli infections whereas sulfadiazine has been superior against *Aerobacter aerogenes*.

B. Pyocyaneus has responded best to sulfathiazole; *B. proteus* best to sulfanilamide, so far, though still a very difficult infection to eradicate.

Enterococcal urinary infections: again a line of zeros, not influenced by any of the drugs.

Staphylococcal infections of the urinary tract respond particularly well to sulfathiazole.

Another group of more or less miscellaneous diseases: Actinomycosis—some good results have been seen with both sulfanilamide and sulfapyridine. Trachoma—splendid results have been seen with sulfanilamide and sulfapyridine. Ulcerative colitis—results have been disappointing so far; sulfathiazole seemed to have some effect, sulfaguanidine very little; the new drug, succinyl sulfathiazole, is giving promise of being a good drug for use in chronic ulcerative colitis. We do not think it is specific or that it will eliminate the original disease, but it cuts down on the secondary bacterial infection so markedly that the bowel has a chance to heal and the patient's general condition improves tremendously. We need more cases before we can reach a final conclusion about the treatment of ulcerative colitis.

Malaria—no appreciable effect, sulfonamide drugs are certainly inferior to quinine or atabrine.

Rocky Mountain spotted fever—no appreciable response.

Trichomonas—unaffected.

Lupus erythematosus, pemphigus, and dermatitis herpetiformis—the patients have shown improvement, but it is nothing to get really excited about; mainly cutting down on the secondary infection.

We now come to the diseases due to the viruses. I have listed lymphogranuloma, common colds, influenza, poliomyelitis, small-pox, measles, and chickenpox.

The only disease due to a filtrable virus which has responded to sulfonamides is lymphogranuloma venereum and there have been good results reported with sulfanilamide,

TABLE 4

Urinary Tract Infections	SA	SD	SP	ST	SG
E. coli	+++	+++	++	++++	
A. aerogenes	++	++++	++	++	
B. pyocyaneus	0		0	++++	
Proteus	++++			+++	
Enterococcal	0	0	0	0	
Staphylococcal	+		+	++++	
Group B. Hem. Strept.	++		++		
Actinomycosis	++		++		
Trachoma	++++		++++		
Ulcerative Colitis	0			+	+
Malaria	0	0	0	0	
Rocky Mountain Spotted Fever	0				
Trichomonas	0				
Lupus Erythematosus	+		+	+	
Pemphigus	+		+	+	
Dermatitis Herpetiformis			+	+	
Virus Diseases					
Lymphogranuloma Venereum	++++		++++	+++	
Common Colds	0	0	0	0	
Influenza	0	0	0	0	
Poliomyelitis	0		0		
Small Pox	0		0		
Rheumatic Fever	0	0	0	0	

sulfapyridine, and more recently with sulfathiazole.

Simple colds—no effect from the sulfonamide drugs and no justification for the use of these drugs in such a patient unless he shows signs of secondary bacterial infection. The same holds for influenza. We stress this so strongly because we feel that one of the great abuses of the sulfa drugs has been in the treatment of common colds. If the victims go on to develop secondary streptococcal or pneumococcal infections, earache, purulent bronchitis, etc., then and then alone is time enough to start one of these drugs. These simple virus infections are too common to justify the use of potentially toxic drugs in the early stages. The great majority of people will recover without the aid of sulfa drugs.

Poliomyelitis — no effect; small-pox — no effect.

Rheumatic fever brings up an interesting problem because all of the drugs that have been tried in active rheumatic fever have failed to produce any beneficial effect and indeed there is considerable evidence that they have

done harm. Patients with rheumatic fever may grow worse if they take one of the sulfa drugs during the active stage of the disease.

That brings up an interesting problem in differential diagnosis because gonococcal arthritis is frequently difficult to distinguish from acute rheumatic fever in the early stages. If we have an acute gonococcal arthritis, the sooner we can give sulfonamide compounds, the better the patient's chance for recovery without deforming after-effects. If, on the other hand, we are dealing with acute rheumatic fever, we wish to avoid the drug for fear of making the patient worse, so we must employ all diagnostic measures possible, such as electrocardiogram (looking for first-degree heart block), careful examination of the heart for clinical evidence of rheumatic involvement, joint puncture and culture of the joint fluid, urethral and cervical smears and cultures in an attempt to make a differential diagnosis. In *chronic inactive rheumatic heart disease* (that is, patients with mitral stenosis, aortic insufficiency, etc.) evidence has been accumulated in New York and Baltimore that by giv-

ing school children with rheumatic hearts prophylactic doses of sulfanilamide throughout the school months, that is during the winter and spring when they are most likely to contract streptococcal infections and other upper respiratory infections, those children may be protected from streptococcal throats and the subsequent flare-up of rheumatic fever which is so likely to follow a streptococcal sore throat. Hence, in inactive rheumatic heart disease, there is justification for the prophylactic use of sulfanilamide or one of its derivatives.

I feel that it is worth while to enumerate those infections where the sulfonamide drugs have failed and, therefore, are contraindicated. This list applies to sulfanilamide, sulfapyridine, sulfathiazole and sulfadiazine: Anerobic streptococcal infections; bacillary dysentery; common colds; influenza; non-hemolytic streptococcal infections; paratyphoid fever; acute rheumatic fever; Rocky Mountain spotted fever; chronic sinusitis; syphilis; trichomonas vaginalis infections; tuberculosis; tularemia; and typhoid fever. In all of these conditions, the drugs are contraindicated because they are ineffective.

I would like to talk now a bit about dosage of sulfadiazine, because I think you can see that as we have gone over these slides I am now championing sulfadiazine as the most important, by far the most important, member of the sulfonamide group of drugs today as far as internal medicine is concerned. It is the drug of choice in streptococcal infections, pneumococcal infection, and it is showing equality if not superiority in the treatment of many of the other infections which the internist encounters.

If you ask me to think of a situation where I would prefer to use sulfanilamide to sulfadiazine, the only case I can think of is that of a patient where there is a complicating acute nephritis. Sulfanilamide does not damage the kidneys, whereas sulfadiazine has been known to produce kidney damage. Hence, in a case of scarlet fever or streptococcal sore throat with a complicating acute hemorrhagic nephritis, we would prefer sulfanilamide to sulfadiazine. I cannot think of another instance where I would prefer sulfanilamide. Sulfathiazole, you note, we still consider slightly

superior in staphylococcal and gonococcal infections and it is, therefore, recommended as the drug of choice for these infections, but on the whole, sulfadiazine is the most important member of the series today. Therefore, I would like to talk just a moment about how we use the drug, as, for example, in a case of lobar pneumonia.

Our policy is, as soon as the patient comes into the hospital, to take a blood culture and sputum for typing if this can be obtained. If a delay is necessary for these laboratory studies, we would prefer to treat the patient without the bacteriological information rather than jeopardize the patient's chances by delaying his treatment. If he is a moderately ill patient with lobar pneumonia, we would give him as an initial dose 0.1 gram per kilo of sulfadiazine by mouth; in other words, for a 70-kilo individual (a 150-pound man) 7 grams of sulfadiazine as the initial dose, and he would get one gram of the drug every 4 hours, day and night, thereafter until his rectal temperature remained below 100 degrees for 72 hours, at which time we would stop the drug abruptly rather than taper off, as was formerly recommended.

One disadvantage of sulfadiazine, as you know, is that it is rather slowly absorbed, and so if you have a very ill patient with pneumonia, rather than wait for the 8 or 10 hours to get the blood concentration up to an appreciable level from oral sulfadiazine, we will start that patient off with a single intravenous injection of sodium sulfadiazine, which is a very soluble alkaline salt, giving 0.1 gram per kilo (or 7 grams for 70-kilo patient) intravenously, made up in a 5 per cent solution in distilled water. This solution cannot be sterilized because the drug deteriorates under the heat. So, we dissolve the powder into thoroughly sterilized distilled water, and the alkalinity plus the bactericidal action of the drug we feel makes the solution safe for injection. The injection is given just as soon as the diagnosis of severe pneumonia is made. We then switch the patient to the oral therapy of 1 gram of the simple sulfadiazine every four hours, day and night, as previously described. It is important

to emphasize that the sodium sulfadiazine is so alkaline that, if you allow it to extravasate in the subcutaneous tissues, a serious slough will result. Hence great care must be taken in giving the intravenous injection.

If you do not have sulfadiazine available in the treatment of pneumonia, we would select sulfathiazole as our second choice drug because it is very effective.

Now the question comes up about serum therapy. While I am on the subject of pneumonia, I would like to make mention of that for a moment. Many are asking: Are the days of serum over as far as lobar pneumonia is concerned? The answer to that question is definitely NO, they are not over. Serum still has a very important place. That is the reason we should type the pneumococcus in every patient with pneumonia, in order to select type-specific serum for him if he should need it.

We give the drug to all patients, but we give serum to a good many as well, and it is difficult to define the criteria as to when serum should be given. The best I can say is that any extremely ill patient should receive serum as well as the drug from the start. Other reasons for giving serum are as follows: If the blood culture grows out positive the day after beginning drug therapy and the patient does not seem any better on the drug. When you find a positive blood culture and the temperature is not down, you can start the serum and keep up your drug. Another indication for giving serum would be if there has been no response on the part of the patient after 48 hours of adequate drug therapy. It has been shown that certain strains of pneumococci are drug-fast; in other words, they are refractory to the action of any of these drugs and grow just as well in its presence as in its absence. Those patients must receive serum or they will likely go on to die. Some clinicians are recommending that all pregnant patients with pneumonia should receive serum in addition to drug. We do not agree with this. We would say any severely ill pregnant patient. Others say that all patients over 50 with pneumonia should get serum as well as drug. Again, we do not agree. It depends on the severity of the illness, and that is a matter of clinical

judgment. Still others are recommending that all Type III cases receive serum as well as drug. Perhaps there is a better argument there because Type III has always been the most difficult form of pneumonia to cure with any type of therapy.

In staphylococcal pneumonia, the drug of choice would be sulfathiazole with a dosage schedule very similar except we start with 4 grams of sulfathiazole (instead of 0.1 gm. per kilo). We keep up the drug in staphylococcal pneumonia much longer, at least 5 days of normal temperature, because the danger of relapse is so much greater.

In staphylococcal septicemia sulfathiazole should be kept up for at least 3 weeks (in high dosage for the first week, up to 9 grams a day, and in decreasing dosage over the second and third weeks) because of the danger of flare-up from a purulent focus somewhere in the body. In staphylococcal infection, drainage of purulent foci is an important adjunct to drug therapy.

Of virus infections the only one that responds to sulfonamide treatment is lymphogranuloma; these drugs are of no use in other filtrable virus diseases.

I would like to say a word about the intestinal infections and this new drug succinyl sulfathiazole. This is a combination of succinic acid and sulfathiazole, and in vitro it is completely inert. It has the peculiar property of not being well absorbed; in other words, patients can take large doses by mouth, 12, 15, 20 grams a day, and not excrete more than 5 per cent of the total amount in their urine. The recommended dosage for the drug is 0.25 gram per kilo of body weight as the initial dose, and the daily dose should be 0.25 gram per kilo divided into 6 or 4 divided doses. This drug possesses the property of knocking down the colon bacillus flora and other gram-negative organisms in the gastro-intestinal tract. It has been used successfully in bacillary dysentery. It has given promising results in ulcerative colitis, cutting down the secondary infection at least. The principal use in which surgeons are interested is prophylactic use prior to resection of the large bowel, shall we say for carcinoma of the colon. They have found that

by giving this drug for 5 days preoperatively and starting it up again as soon as the patient can take it postoperatively, they have been able to cut down on the incidence of secondary infections, and breakdown of the suture line. The patients are more comfortable because they have less gas and less pain. The drug really seems to have a definite place in that particular field of large bowel surgery.

I believe succinyl-sulfathiazole is now on the market and we would recommend it in preference to sulfaguanidine for the treatment of bacillary dysentery because it seems to be less toxic and just as effective.

The toxic effects due to the sulfonamide drugs are one of the real bugaboos of chemotherapy, and all of you undoubtedly have had unpleasant experiences if you have used any of these drugs very many times. I am not going to go into great detail, but I will summarize the type of toxic effects that are encountered in two groups:—

(1) *Serious toxic reactions*, in which case the drug should be stopped and fluids forced as soon as evidence of such toxic effect has developed. These serious toxic effects are acute hemolytic anemia, granulocytopenia or agranulocytosis, drug fever (fever which is evidently due to the drug and not to persistence of the infection), drug rash, severe conjunctivitis, gross hematuria, and diminished kidney function as shown by oliguria or rising NPN; hepatitis, that is jaundice developing during the course of drug therapy which you feel must be attributed to the drug; peripheral neuritis, and psychosis. Those are the more serious drug toxic effects, and I think you might be interested to know the results of a recent survey of the incidence of such serious toxic reactions with the four drugs which we have discussed this afternoon: Sulfanilamide, 11.9 per cent; sulfapyridine, 15.9 per cent; sulfathiazole, 18.6 per cent; and sulfadiazine, 6.5 per cent. In other words, sulfadiazine has much the lowest incidence of serious toxic reactions. Sulfathiazole is almost three times as toxic as sulfadiazine. Therefore, you can see my argument for advocating sulfadiazine so highly to you this afternoon.

(2) There are certain *minor toxic effects*

which do not require stopping the drug at once: Anorexia, nausea or vomiting, headache, cyanosis, crystals in the urine, and microscopic hematuria. Leukopenia of disease, as for example, low white count due to undulant fever is not a contraindication to giving one of these drugs, nor is anemia of a disease a contraindication. If you know the anemia is due to infection, you will not withhold your drug because of the anemia. The same might be said to apply to both hepatitis and nephritis complicating the infection. You may use the drug in the face of jaundice and in the face of nephritis if you feel certain they are due to the infection and were present before you started your drug.

The question often arises: Can we give other drugs along with the sulfonamide compound? You may wish to use laxatives, digitalis, aspirin, sedatives of one sort and another, neo-arsphenamine if the patient has a concomitant syphilis. We can say that there are no contraindications to using other drugs in conjunction with the sulfonamides when there is an indication for them.

The antidote for sulfanilamide or any of its derivatives is one and one only, and that is water, and it should be given in large amounts by mouth or by intravenous injection, that is intravenous glucose and saline, if the patient cannot take the water by mouth in sufficient quantities. In other words, when you get a serious toxic reaction, force fluids to 5,000 cc. in order to wash the drug out of the body as quickly as possible. Only after getting rid of all the drug can you expect the toxic manifestations to subside.

Before closing I should like to say a few words about the use of the sulfonamide drugs in surgery.

Today the single most important use of the sulfonamides is in the treatment of wounds. Many lives were saved at Pearl Harbor by the use of sulfanilamide powder in open wounds. Many of the wounds could not be debrided for 48 to 72 hours after they were inflicted, yet through the local use of sulfanilamide wound infections were very rare. At the present time powdered sulfanilamide because of its physical properties seems to be the best of the sul-

fonamide drugs for local use. The recommendation for the treatment of war wounds or other traumatic wounds today is sulfanilamide powder locally combined with sulfadiazine by mouth.

Earlier in the afternoon, I spoke of the prophylactic use of succinyl sulfathiazole in large bowel surgery. This is an important recent contribution which should bear fruit in the future of colonic surgery.

Many surgeons are now dusting sulfanilamide powder freely in the peritoneal cavity after removing a gangrenous or ruptured appendix; also in cases of primary peritonitis. This practice along with the use of intravenous sodium sulfathiazole or sodium sulfadiazine post-operatively in such cases has served to cut down on the fatality rate tremendously. Post-operative pneumonia, so greatly dreaded in elderly patients or after prolonged anesthesia, is readily amenable to sulfadiazine therapy since the majority of cases are due to a pneumococcus. Post-operative pneumonia should be treated in exactly the same manner as lobar pneumonia.

The best treatment for burns is still a controversial subject. One form of sulfonamide

therapy which has given promising early results is the sulfadiazine spray method of Pickrell. The solution to be sprayed consists of 3% sulfadiazine in an 8% aqueous solution of triethanolamine. After the burned area has been debrided, it is sprayed with the sulfadiazine solution every hour the first day, every 2 hours the second day, every 3 hours the third day, and every 4 hours the fourth day. By this time a tough eschar has formed beneath which healing takes place in the majority of cases without infection, excessive loss of fluid or appreciable pain.

No talk on chemotherapy today would be complete without mention of two new substances, gramicidin and penicillin, derived from a soil bacillus and a mold respectively. Both of these substances in minute quantities are highly bactericidal for practically all gram-positive bacteria. Gramicidin has been used locally in the treatment of skin ulcers, infected paranasal sinuses, etc., but it is too toxic for internal use. Pure crystalline penicillin, however, may be given intravenously and gives great promise of success in treating severe systemic infections due to gram-positive organisms which fail to respond to sulfonamide chemotherapy.

Metrazol (Penthamethyltetrazol) in Auricular Paroxysmal Tachycardia

W. W. BOYD, M.D.
SPARTANBURG, S. C.

The usual attack of paroxysmal auricular tachycardia is of no serious import and ends spontaneously after a variable period of minutes or hours, leaving the patient none the worse but for the temporary exhaustion. However, these attacks are distressing to the patient and may at times become serious and lead to central peripheral thrombosis or to cardiac failure from exhaustion. How well a heart withstands the paroxysm depends on the rapidity of rate, the length of the attack and on the previous integrity of the heart.

In most instances where the paroxysms do not cease spontaneously, they respond to one or other of the simple procedures, such as breath-holding, induced vomiting, carotid sinus pressure or ocular pressure. When not controlled by these measures, one has three remedies—quinidine by mouth in 3 to 10 grain doses; digitalis in 10 to 20 grain doses intravenously or quinidine sulphate in 5 to 10 grain doses intravenously. Either intravenous drug is to be administered slowly and stopped if the heart rate changes to normal. The response is frequently noticed while the medication is being given or within the next twenty minutes and there is either no response or a complete cessation of the attack.

Rarely all these measures fail, and each of us has probably seen one or more fatalities from uncontrolled tachycardia.

About three years ago, after having tried all these methods in a patient with a long paroxysm of tachycardia, with no relief, I gave intravenously one cc. (gr. $1\frac{1}{2}$) of metrazol with almost immediate improvement in the patient's

general condition and a cessation of the attack within two or three minutes.

Since that time, I have tried this drug in eleven patients who did not respond to vago-vagal stimulation with almost immediate relief in all except one case. This one responded to an intravenous dose of 12 gr. of digitalis.

Report of case No. 1: A white female, aged 38, gave a history of two previous severe attacks of rapid heart action which lasted two and three days, respectively, and which terminated after she had hospitalized and given various treatments, including intravenous glucose. When seen, she was a little short of breath, a trifle cyanotic and somewhat anxious. The heart rate was 184; the blood pressure 105 systolic and 85 diastolic. Electrocardiographic tracings showed a typical auricular tachycardia. All the previously mentioned remedies were tried without bringing relief. The patient's condition became more grave with the systolic pressure falling until I was uncertain as to being able to determine either systolic or diastolic pressure. With the hope of raising the blood pressure, she was given intravenously 1 cc. of metrazol. There was an immediate improvement in the patient's general condition and the paroxysm ended within two or three minutes.

The response in this case and others may have been coincidental, but I am led to believe it due to action of the drug since the response has been so nearly uniform in this small series of cases. Other physicians whom I have asked to try this procedure have reported good results.

From this experience, I am recommending a trial of what has seemed to me a safe and useful remedy for what is a distressing and occasionally a serious episode.

(Read before the Spartanburg County Medical Society, September 28, 1942.)

Functional Heart Disease

HUGH SMITH, M.D.

GREENVILLE, S. C.

Definition:

To discuss this subject with any satisfaction we must agree on a definition. That of Levine appeals to me; namely, "Patients with abnormal signs or symptoms of heart disease in whom there is no structural heart disease."

With this definition we can immediately think of several topics, any one of which could well be the subject of such a paper. However, in thinking over this subject and those phases especially interesting to a group of general physicians, we can mention several topics only by title and then devote our time to the type of functional heart disease most often seen. For instance, benign paroxysmal arrhythmias, such as auricular flutter and auricular fibrillation, are not often encountered. Do not understand me to say that these conditions are usually functional, but only that they are at times functional in origin.

The topics that I have chosen for discussion are:

- (1) Neurocirculatory asthenia
- (2) Benign systolic murmurs
- (3) Benign cardiac irregularities
- (4) Paroxysmal auricular tachycardia
- (5) Radiculitis

Naturally I can only touch on any of these briefly, but perhaps a review of their more common features and differential points may prove worth while.

(1) Neurocirculatory asthenia (Effort syndrome and Soldiers' heart).

This group of patients represents the most common type of functional heart disease and is no doubt one with which you are thoroughly familiar. It is common in all walks of life and is often seen in young adults. Even as we now approach another tremendous world upheaval in which fear and anxiety play a tremendous role, we may expect to see again a rapidly increasing incidence of this particular condition. The effort syndrome was first de-

scribed during our own Civil War some eighty years ago. It came into great prominence just twenty-five years ago during the great war to end wars. It is called effort syndrome because the symptoms are those usually seen from real exertion. These are palpitation, breathlessness, fatigability, and precordial pain. In this group of patients these symptoms are more or less constantly present and certainly they occur without adequate effort. In the development of this syndrome we realize at once that there are two important etiologic factors: (1) Predisposing: A family history of neurasthenia, psychosis, nervous breakdowns, epilepsy, and the like is commonly obtained. Also a personal history of nervousness, fainting spells, insomnia, anorexia, and social inadequacies is commonly present. (2) Precipitating: With such a background one can readily see why the symptoms of neurocirculatory asthenia occur under strains and stresses that would ordinarily not affect the more normal or substantial individual. The precipitating factors then might be anxiety over economic, social, or marital problems or actual physical fear. Chronic emotional stress on such a background would logically explain this familiar group of symptoms.

The diagnosis is made first by a careful history and then by a complete physical examination. Even with such a family and personal history as mentioned above, we must take every care to be sure that no structural disease exists.

Particularly must hyperthyroidism and tuberculosis be ruled out. If a small systolic murmur is present, we must be sure that there is no history of previous rheumatic infection and then the presence of this murmur must be explained fully and carefully to the patient, so that another examiner later might not add fuel to the fire by mentioning this murmur which you perhaps may have thought it best not to mention. At once confidence in your examination would be lost. These patients must be treated with sympathy and understanding and with most positive reassurance.

(Major Smith is now serving with the armed forces. This paper was submitted for publication before he entered the service.)

Perhaps the patient has already been told of a heart murmur and has been advised to restrict his activities to greater or less degree. This is often difficult to undo and requires real tact and confident firmness. Such an approach can only be effective if the history and examination have been so thorough that confidence is established.

Case 1.

Some fourteen years ago a young man with this syndrome had been seen repeatedly and without much success. Finally he appeared in my office during the hunting season and, since he had been fond of hunting before, I persuaded him to go hunting with me for an afternoon. After walking for three hours, I was the one exhausted and the patient, feeling fine, realized that he must have at least a better heart than I. As we returned to the car he admitted that he was convinced finally that he was in no immediate danger of serious heart disease. From then until now he has never mentioned his heart to me.

In such cases it is important to be sure that the heart is normal and I believe the expense of an electrocardiogram and an X-ray of the chest and heart is justifiable, if only for their reassurance value. Let me say again that, having determined that the heart is normal, say so positively and don't impose vague restrictions. These patients must regain absolute confidence in their heart if they are to remain well.

(2) Benign systolic murmurs.

In deciding that a systolic murmur is benign, there should be no history of previous rheumatic infection, no hypertension, no hypertrophy, and no diastolic murmurs. Many of these murmurs are cardiorespiratory and are readily recognized as such simply by examining the patient in both the erect and recumbent positions and in both phases of respiration. A systolic murmur that appears only after strenuous exercise is perhaps more common than not, and is certainly no evidence of structural disease. Loud systolic murmurs must be given careful consideration, for occasionally such murmurs are the only evidence left of a previous rheumatic infection. Of course anemia, hyperthyroidism, and neurocirculatory asthenia would be considered. Then, with all

available evidence against heart disease, this murmur should be described and explained to the patient and then again he must be encouraged to live a life of normal activity. Occasionally definite systolic murmurs of real intensity remain unexplained and are consistent with a long and useful life.

Case Report.

A young man, who graduated at the Citadel a few years ago and who was active in athletics while there and after graduation was commissioned in the Reserve Army and attended two encampments, finally came before the Army Medical Board again for re-enlistment. Up until that moment he had never been conscious of his heart. He was told that he had a heart murmur, with mitral stenosis, and was given an honorable discharge for physical unfitness. There was absolutely no history suggestive of previous rheumatic infection and no cardiac enlargement and no abnormality of the electrocardiogram or of the heart contour in the teleoroentgenogram. He did have a definite systolic murmur after exercise and no murmur that I could elicit in any position at rest. Having convinced myself that he had no organic heart disease, I was able to reassure him. However, he was rather smart and put me on the spot by demanding that, if he had no heart disease, I help him get back his Army commission. After some correspondence and argument he was re-examined by the Board and I am under the impression his commission was restored.

Case Report.

Another case of benign systolic murmur, with almost tragic results from faulty interpretation, was that of a young man seen some fifteen years ago. His story is particularly interesting in that he was a young man of inherited wealth who had always been extraordinarily active and healthy. In fact he was for several years the local golf champion and thought nothing of playing eighteen to thirty-six holes of golf week after week on the Greenville courses, all of which are rather hilly and therefore strenuous. He was examined for life insurance and this examiner found a faint systolic murmur after exercise and told the young man that he had a heart murmur and

advised him to curtail sharply his strenuous physical activities. The insurance was not allowed. This young man became quite depressed and, ridiculous as it may seem, within the next two weeks he stopped driving his car, made a will, and resigned himself to his fate. Finally, at the insistence of some mutual friend, he appeared in my office. At that time I was on the second floor and he was actually afraid to climb this flight of stairs, though only two weeks before he had played thirty-six holes of golf without the slightest discomfort and would have run up three flights of stairs without thought. Briefly, my examination revealed absolutely no evidence of structural heart disease and, after a painstaking history and physical, I was able to convince him that the medical examiner had simply made an honest mistake in his interpretation of a benign systolic murmur heard only after exercise. I insisted that he play thirty-six holes of golf that very afternoon and report again the next day. He did, and survived. The next day I took his case up with the insurance company, which happened to be a Greenville company, and sent him to the home office for examination by the medical director. He agreed with my interpretation and issued that day a twenty-five thousand dollar policy. Until now this young man remains well, fairly wealthy, and an excellent golfer.

While on this group, I would like to say a few things about the scaphoid or funnel chest, which is occasionally the cause—by mechanical interference—of heart murmurs of real intensity. If the deformity is very severe, it might actually cause signs of heart embarrassment. I have seen several such cases, any one of which would be interesting to report. I wish to report one of real interest, largely because I failed to recognize it entirely. Several years ago I saw a boy then twelve years old, who had been in bed for several weeks with a low-grade fever. All examinations were negative except that a systolic murmur had appeared during this fever and largely on this basis I made a diagnosis of rheumatic fever. He was kept in bed for three months and the fever disappeared. However, the systolic murmur remained and increased in intensity. This boy

was followed for several years and except for the murmur, which was constantly present, he had no symptoms of heart disease. The heart did not enlarge and the electrocardiogram constantly showed a right axial deviation and nothing else. In spite of my advice to the parents and the boy, that he not engage in strenuous activities, the boy refused to be a heart invalid. He felt fine, and by the time he was a sophomore in college he was actively engaged in competitive tennis and was the pole vaulter for his track team. Certainly I should have realized then that he had very little, if any, heart disease but I could not forget my own diagnosis of rheumatic fever. When the boy was nineteen, Dr. Paul White was visiting in Greenville and kindly saw this boy for me. He demonstrated beautifully a very flat mediastinum, due in part to a moderate funnel chest deformity and in part to a moderate dorsal lordosis. A lateral X-ray of the chest showed this clearly. Neither of the deformities alone would have adequately explained the heart murmur but, unfortunately, I had never grasped the fact that both slight deformities could produce the picture. Dr. White congratulated the boy on his excellent health and later got him into the Naval Academy without difficulty.

(3) Benign cardiac irregularities.

(A) Sinus arrhythmia.

This is absolutely an unimportant variation in rate and rhythm and readily recognized by a simple waxing and waning rate which is often associated with the respiratory phase.

(B) Extrasystoles of any type.

The most common extrasystole is a premature ventricular beat. Abuse of tobacco, coffee, loss of sleep, and worries are often factors in their development. In the absence of any structural heart disease I do not believe that they are of any significance. Certainly those premature systoles that occur at rest and disappear on activity are ordinarily unimportant. Usually they disappear rather promptly when the above factors have been corrected, and the patient has been reassured.

(4) Paroxysmal auricular tachycardia.

This perhaps is rather an infrequent occurrence in any one man's experience. Yet it does occur often enough to cause some con-

cern and should be discussed. The characteristic thing about paroxysmal tachycardia is the dramatic onset of sudden tachycardia, with a rate ranging from 160 to 200 as a rule and which may last a few moments, a few hours, and less frequently an episode may last for days. Characteristic also is the dramatic offset of symptoms. I have had patients describe the onset and offset as dramatic to them as the throwing of an electric switch, with resulting light or darkness. Between attacks the heart is absolutely negative on physical examination. Each attack in any given individual as a rule is quite similar in rate and duration. In other words, if one or two attacks occur and last five or ten minutes, subsequent attacks will usually do the same. During the attack the heart is absolutely regular and the rate cannot be influenced by change of position, deep breathing, or rest. Naturally, the subject is quite upset by such a dramatic storm in his chest and until they have experienced several attacks and have fully understood them, they are apprehensive and may easily develop an anxiety neurosis. The usual methods of treatment during an attack are familiar to you all. The simplest things to be tried are pressure over the orbits or carotids, only one side at a time, induced vomiting, ice to the precordium, etc. If the attack does not respond to such simple measures, then you can consider the exhibition of Acetyl B-Methycholine in 20 mg. doses subcutaneously. This is a powerful vagostimulant and will often restore normal sinus rhythm quite promptly. Should the attack persist in spite of this, then you might use Quinidine Sulphate in fairly large doses, or even Digitalis in quite a large dose. Digitalis, 6 to 8 decigrams intravenously at one dose and repeated in twelve hours if necessary, can be given.

While discussing paroxysmal auricular tachycardia as a functional heart disease, one must of course again assure himself that no structural heart disease exists. In the presence of organic heart disease such as mitral stenosis the condition is of more importance, and congestive failure or peripheral thromboses may complicate the picture much earlier. In general, during an attack the systolic pressure falls

and the diastolic pressure rises, with a diminution of the pulse pressure and a vascular stagnation. This is believed to be the explanation of peripheral thromboses.

With a patient subject to attacks of paroxysmal auricular tachycardia, preventive treatment is important. Here again it is wise to explain in some detail the situation to the patient. If the attacks are infrequent and last only a few minutes, then continual medication is perhaps unwise. If the attacks occur more frequently and are of longer duration, then the regular exhibition of Quinidine Sulphate or Digitalis may be tried and are often effective. Ten grains of Quinidine Sulphate *t. i. d.* is perhaps the maximum dose to be continued and, if attacks are not controlled on this dose, then the drug should be discontinued. During an attack you might use up to 60 or 80 grains in the twenty-four hours, if this much is required to restore normal rhythm. Digitalis, to be effective as a preventive drug, must be given in adequate dose. Perhaps three decigrams a day for four or five days and then one decigram daily for long periods of time.

Paroxysmal auricular flutter does occasionally occur in the absence of structural heart disease. I have never seen such a case and mention it only to remind you that such cases are reported.

Paroxysmal auricular fibrillation occurs more often in the absence of structural heart disease than is generally recognized. The symptom complex is well known to you. It can be simply described as a total irregularity, with a marked pulse deficit as a rule. I might mention one patient that I first saw in 1922 with some palpitation and a feeling of distress in his chest. He had been told fifteen years before that his heart was totally irregular and, so far as he knew, it had never been regular since. He had an auricular fibrillation in 1922 without other evidence of structural heart disease. I saw him at regular intervals from then until his death this last winter at the age of seventy-six of cancer of the rectum. During the eighteen years that I saw him, and these were the late years of life, he never developed symptoms of heart failure.

(5) Radiculitis.

This is characteristically a disease that occurs after forty. Radiculitis, by its own term, is the radiation of pain along the sensory paths. If there is an osteo-arthritis involving the root segments from D-1 to D-7 on the left, then of course pain in the precordium is to be expected. Characteristically, root pain is referred in band-like zones and spread over an area two or three inches wide around the chest wall. Of course the peripheral pain might be limited to the anterior chest wall, and therefore cause real concern to the patient. We see many of these cases in the old age group, where angina pectoris, coronary sclerosis, and osteo-arthritis most commonly occur. The viscerosensory paths have a fairly constant pattern, but as they are distributed through the same sensory nerves the pain of radiculitis

or heart disease can closely simulate each other. An important differential point is that the cardio-viscerosensory pain, in its radiation, jumps from one segment to another—from C-8 to D-7—without completing the entire distribution of the original skin segment where it first appeared. The pain of radiculitis is not usually related to exertion, eating, or worry and does not pull a patient up sharply with fear and anxiety as does cardiac pain. The absence of structural heart disease and the demonstration of osteo-arthritis of the dorsal spine will ordinarily give you the correct interpretation.

There are gradually accumulating evidences that those who reach a ripe old age are often small and physically under-developed people.

MEDICAL COLLEGE NEWS

Dr. Morris Belkin, who obtained his Ph.D. from Yale, is the latest addition in the Department of Pharmacology, where he is an instructor.

Dr. William Prout, officially acting-director of the Department of Pharmacy, attended the Convention of the American Pharmaceutical Association in Denver and addressed the Section on Practical Pharmacy.

Dr. R. E. Remington, head of the Food Research Department, who has been sick off and on during the summer, is now off at Duke University undergoing a thorough physical examination.

On October 12, Dr. Kenneth Lynch, head of the Pathology Department, delivered an address entitled "Abnormal Chorionic Growth" before the Columbia Medical Society.

Dr. John Arthur Siegling, orthopedic surgeon, after several years residence in Illinois where he was in charge of the department of bone and joint surgery at the Carle Clinic at Urbana, has returned to Charleston to practice. He will be on the faculty of the Medical College in orthopedic surgery.

NEWS ITEMS

Lieut. John D. McBrearty, formerly of Williamston, S. C., was recently married to Miss Sarah Louise Hepborn of Florence, S. C. The ceremony was performed at Langley Field, Virginia where Dr. McBrearty is stationed.

Dr. W. W. Edwards, (Greenville, S. C.), who is serving with the armed forces somewhere overseas, has been promoted from the rank of captain to that of major.

Due to gasoline shortage and to the calling of so many members into the armed forces, the Seventh District Medical Association has discontinued its meetings for the duration of the war.

Dr. John McGill Pratt, formerly of Columbia but now a lieutenant in the medical corps of the U. S. Army, and Miss Dorcas Cromer were married on September 29th at Carlisle Barracks, Pennsylvania. Lt. Col. George Benet, also of Columbia, was one of the guests present.

Dr. H. G. Waddell, formerly of Columbia, is now serving with the armed forces. He holds the rank of Colonel.

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HOW WE STAND

Despite the adverse criticism which has recently appeared in certain quarters the Procurement and Assignment Service is to be commended for the splendid way in which it has carried on its work this year. At the beginning of 1942 there was a woeful need for physicians in the Army and this problem was laid at the feet of Procurement and Assignment. A general appeal was made for physicians but this failed to secure the necessary number and a more detailed plan was adopted with the formation of Medical Recruiting Boards in each state.

Last June, Procurement and Assignment established a quota for each state, the quota consisting of the additional number of physicians

from that state who were expected to join the armed forces and it was based upon a careful consideration of the medical needs of that state and of the available physicians in that state. These quotas were given to state chairmen who were asked to proceed in their work with the medical recruiting boards.

As of October 31, 1942, the Procurement and Assignment Service gave the following figures with reference to the individual states and their quotas.

South Carolina along with many other states can be justly proud of having not only filled its quota but of having almost doubled the number requested.

New quotas will be issued for 1943 and they will probably be issued monthly as the need

STATE	% to Quota	STATE	% to Quota	STATE	% to Quota
Alabama	204	Louisiana	214	North Dakota	114
Arizona	156	Maine	128	Ohio	115
Arkansas	122	Maryland	109	Oklahoma	132
California	81	Massachusetts	78	Oregon	113
Colorado	124	Michigan	126	Pennsylvania	93
Connecticut	76	Minnesota	98	Rhode Island	92
Delaware	152	Mississippi	161	South Carolina	174
Dist. of Columbia	100	Missouri	104	South Dakota	137
Florida	118	Montana	122	Tennessee	166
Georgia	149	Nebraska	91	Texas	147
Idaho	162	Nevada	65	Utah	111
Illinois	82	New Hampshire	85	Vermont	96
Indiana	136	New Jersey	107	Virginia	138
Iowa	116	New Mexico	224	Washington	126
Kansas	114	New York	78	West Virginia	153
Kentucky	168	North Carolina	163	Wisconsin	85
				Wyoming	158

arises. Should the present plans for the expansion of our army to 7,500,000 be carried out it is estimated that the army will need around 1,000 physicians per month. To supply these physicians further quotas for each state will be necessary, but Procurement and Assignment has stated that those states which have already over-subscribed their quota of physicians will be given due credit in establishing new figures.

In view of all this it is safe to assume that South Carolina will not be asked to send any more physicians into service during the immediate future.

THE NEXT JOB

The next and far more difficult task which faces Procurement and Assignment is that of attempting to supply the needs of various local communities with medical care. These needs are greatest in those mushroom areas where there has been a tremendous increase in population due to the establishment of industries. So far as possible the relocation or dislocation of physicians which will be necessary to carry forward this work should be made on the state level and it behooves each state medical association to consider well the medical needs of its own people and the possibilities of filling those needs.

The S. C. Procurement and Assignment Chairman in conjunction with the Council of the State Medical Association is giving serious thought to this problem and suggestions from any of the members as to its solution are earnestly requested.

THE 18's AND 19's

Boys who are eighteen and nineteen years of age are now subject to induction in the Army through the Selective Service System. The effect which this will have upon those young men who are contemplating the study of medicine is one which is being given serious thought. The nation will need doctors in the days to come and every provision must be made to keep bona fide pre-medical students

in school. On the other hand, some recognition must be given these boys for they will feel like "slackers" when they see their comrades going into the army. They will feel the urge to don the uniform and to gain the plaudits of the crowd and no little urging may be needed to keep the high class pre-medical student at his desk. It is no easy task which faces General Hershey and his advisors and we wish him well in the decision which he must make in the immediate future.

THE REFRESHER COURSE

It is the earnest hope of this Journal that the recent Refresher Course in Charleston will become an annual affair. Sponsored by the Alumni Association of the Medical College of the State of South Carolina a group of outstanding and nationally known physicians were brought to Charleston where they gave a series of lectures and discussions which were outstanding for their scientific and practical value.

In spite of the war the attendance was good and everyone who was present profited by being there. Drs. James Fouche and Joe Waring and the other members of the committee who worked with them are to be congratulated upon the results of their efforts.

THE ANNUAL CONFERENCE OF SECRETARIES AND EDITORS

Recently there was held in Chicago the annual conference of state medical association secretaries and editors. This meeting brought together the secretaries and editors and other officers of state medical associations from all over the country who were given a broad picture of the medical situation which exists today and of the problems which medicine will face tomorrow.

Our President-elect, Dr. William Atmar Smith and the Secretary-Editor represented South Carolina at this meeting and on page 325 will be found a travelogue of their trip.

A TRAVELOGUE

Annual Meeting of State Medical Association Secretaries and Editors

At 1:30 Thursday morning the train rolled in and I climbed aboard. I had expected to find Dr. W. A. (Billy) Smith soundly sleeping but instead he was waiting up to greet me—you can't beat these Charlestonians for courtesy. So began our trip to Chicago. This annual meeting is so full of worthwhile information that our Council decided to send Billy Smith (our president-elect of the state association) along with me so that he would be better able to guide the affairs of our organization during the coming year.

After a good night's sleep and breakfast, we arrived in Washington. With several hours to wait, we decided to go out to Walter Reed Hospital to see Lt. Col. M. R. (Dolph) Mobley and other friends. Dolph met us with open arms—he was so glad to see two boys from home that he almost kissed us—and took us in charge. Under his guidance we went over the big hospital and were privileged to meet many of the officers including: Col. Laurent L. Roche, graduate of the Medical College in Charleston, and now Executive Officer of the Post; Col. John King, a personal friend of Billy Smith's and an old instructor of mine, Chief of the Medical Service; Col. P. E. Duggins, Chief of the Surgical Service; Col. J. M. Dow, Chief of the Ophthalmological Service (who served with the British during the last war, was wounded, and was a prisoner for some time); and Capt. Robert Cathcart, a Charleston boy.

Following a delightful lunch with Dolph and Mrs. Mobley, Billy went off for a chat with Col. John King while I went up to the E. E. N. T. department to watch Dolph (who is chief of the service) and his associates work. Patients came and went and except for the appearance of uniforms, one could have easily imagined himself in a civilian clinic. The patients ranged from privates to a British officer and a retired U. S. General's wife.

The overnight trip to Chicago was uneventful except for the train being late—necessitating our rushing from the station to the place of meeting and even then arriving fifteen minutes late. As we entered the hall, Col. Fred Rankin, Pres. of the A. M. A. was already speaking.

Before giving the highlights of what we heard and learned, it might be well to explain the nature and scope of this conference. The meeting is sponsored by the Board of Trustees of the A. M. A. and all secretaries and editors of state associations are invited to attend, with expenses paid. Other state officers are also welcome to attend. Effort is made to secure outstanding leaders in various phases of medical welfare and these men discuss the accomplishments of the past, outline plans in the making or in the process of operation, and make suggestions as to what the future might bring. Those

who attend are free to ask questions and it is from these questions that much information is obtained. It is solely a deliberative conference for the interchange of information and ideas and it is not an executive meeting of any type. But from my experience of last year, I am convinced that it is the best medical meeting available for finding out what is going on in the broad field of medicine.

Coming back to Fred Rankin, we found him discussing the general subject of the needs of the armed forces for doctors. The present needs have been met, but as the army grows more physicians will be needed during 1943.

The next speaker was Admiral Ross McIntyre, Surgeon General of the Navy. This was my first opportunity to hear Admiral McIntyre and I was thoroughly convinced that we have a highly intelligent and capable man in charge of our medical service in the Navy. He paid high tribute to the physicians who stepped from civilian practice into the medical work of the Navy and praised the work which they are now doing all over the globe. He stressed the point that Pearl Harbor would be marked as an advent in American medical history—the lessons which we learned there have enabled us to save thousands of lives. Mortality figures will be tremendously high in this war, he said, but war casualties will be less severe than in the last war. Then he went on to mention the use of plasma on the battlefields of Guadalcanal and of the splendid work of the airplane transports. He insisted that medical research must go on as never before and mentioned a few of the problems with which the naval medical officers were struggling.

Admiral McIntyre then passed on to a discussion of medical practice in the post-war era. When the boys come back home to their practices, when the present financial boom passes and money becomes scarce—what then? Will the average layman be able to afford the cost of medical care and of specialists such as we have known it up till now? What constructive plans are we making for the future, and what type of medical world will our colleagues find when they shed their uniforms? He insisted that we must start planning for that day now.

Dr. Frank Lahey, Chairman of Procurement and Assignment, then mounted the rostrum. After paying tribute to all of those men and organizations who had helped his committee so valiantly, he proceeded to give the plans for the future. The armed forces will need approximately one thousand physicians a month during 1943 and each state will be given its quota, probably on a monthly basis. Those states which have already oversubscribed their quotas will be given due credit. (Elsewhere in this Journal is published the status of the various states relative to their quotas for 1942. From this, one would assume that South Carolina will not be called upon for more physicians in the immediate future).

The task which Procurement and Assignment now faces, he continued, is an ever larger job than the one which has been done. What we are now faced with is the shifting or dislocation of certain physicians to areas where the present need for medical care is great. As far as possible, this changing should be done on a state level (i. e. within the borders of a given state), but if the war continues long enough it might mean the taking of more drastic steps. So far, he said, 218 physicians have already been moved into 154 communities in 29 states—and all on a voluntary basis. Whether the voluntary system would suffice or whether some compulsory steps would have to be taken will be determined in time.

At this point there was a general discussion of state licensing laws for physicians which, as they now exist, would bar the moving of physicians from one state to another unless reciprocity had been established. A few of those in the audience favored a moratorium on those laws for the duration of the war, but the majority appeared to oppose any change in existing legislation which would in any way lower our present standards of licensing physicians. Once the bars are lowered, the problem of the emigre physicians and the graduates of non-accredited medical schools would become a splitting headache for every state board of examiners and every state medical association.

Dr. J. H. Fitzgibbon of Portland, Oregon, was next called upon to tell of the efforts made by the physicians of his home city to provide for the rapidly growing (ship-building) population in that community. The highlights of the plan which they had evolved are; general immunization of the populace (typhoid, diphtheria, and smallpox) by the Public Health Service in conjunction with practicing physicians, efforts to increase hospital bed capacity through greater use and adaptation of present buildings, a pregnancy survey to show when the obstetrical load on the hospitals would be the greatest, shortening the stay of all patients and particularly obstetrical patients in the hospital, securing married nurses for home care of obstetrical patients, the pooling of office hours by physicians so as to provide office care for the men who work on day shifts as well as for those on night shifts.

Representing the Surgeon General of the Army, Brig. General C. C. Hillman spoke on the subject of physicians in the Army. On Dec. 1, 1942 there were only 11,700 medical officers. In May, 1942 the number had risen to 14,000. Following the intensive work of the Medical Recruiting Boards, the number today is in the neighborhood of 36,000. Every effort is being made to relieve medical officers from administrative duties and it is hoped, in this way, to reduce the number of physicians who will be needed in the future.

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Lunch at 1 P. M. furnished a much needed rest for our over-crowded brains. The lunch was held

on the fifth floor of the A. M. A. Building. Billy Smith sat between two extremes. On his right was Olin West, Secretary of the A. M. A.—a man who has served organized medicine so long and so well. On his left sat one of the youngest and greenest of the entire crowd—myself. Others around us were Edgar Shanks, Secretary of our neighbor state, Georgia; Peter Irvin, Secretary from New York; Wingate Johnson, Editor of the N. C. Journal; and L. D. Redway, Editor of the N. Y. State Journal. The atmosphere was delightful, the food was good—and my colleague from Charleston was even able to get a second cup of coffee.

The afternoon session opened with James Paullin, President-elect of the A. M. A., speaking. He discussed more fully the coming work of the Procurement and Assignment Service in supplying physicians for those civilian areas where the present need for medical care is urgent. He urged the need for consultive groups in each state (with representatives from Procurement and Assignment, the Medical Association, the Public Health Association, Industry, and Labor) to study and cope with the problem.

Thomas Parran, Surgeon General of the U. S. Public Health Service, was the next speaker. He began by telling of the fight against malaria and syphilis now being waged by public health officers around cantonments. Highly significant was his report that there had been no increase in the incidence of syphilis in this country since Pearl Harbor whereas the rate in Great Britain had risen 40% in the past three years (but at that, the rate in Great Britain is still considerably below ours). He then went on to discuss the need for physicians in industrial areas and stated that in many instances dislocation of physicians might be necessary on a national basis with a national plan. He told of experiments where physicians were made Public Health Officers (wearing a uniform) and sent into needy areas—thus circumventing the boundaries established by state licensure laws. These men were paid officer's salaries and the fees received for their services were turned over to the local public health service for their work. "We may have to ration physicians for the civilian population, and we may have to lower the medical needs of the armed forces," was his conclusion.

Col. L. G. Rowntree, Chief of the Medical Division of the Selective Service System, discussed some of the medical problems encountered by Selective Service. There was an overall 42% rejection of inductees. Originally, some dental defect was the greatest cause for rejection, but now, with the lowering of physical standards, nervous and mental disease head the list. Far more men were rejected in the higher age bracket than in the lower age group. The rejection rate was lower in the northern states than in the southern states. The question of the 18 and 19 year old boys who are pre-medical students must be considered very carefully and he as-

sured us that it was receiving utmost attention.

Crcighton Barker, Secretary of the Connecticut State Medical Society, discussed forcefully and in formally the role which local associations and local association officers could play in the present emergency.

The afternoon session closed with an eloquent appeal by Walter Donaldson, Chairman of the War Participation Committee of the A. M. A. and Secretary of the Penn. State Medical Society, for unity and for strenuous effort on the part of all those engaged in the field of medicine and of medical welfare.

* * * * *

Friday evening was devoted to the Annual Dinner Meeting of Editors—to which all members of the conference were invited. The fellowship was delightful. Seated at our table were; W. A. La Motte, Secretary from Delaware; H. O. Jahr, Editor of the Nebraska Journal; Douglas Cannon (a Spartanburg boy and a graduate of Clemson) Secretary-Editor from Alabama and Secretary of the Alabama State Board of Health; Pierce Rucker (who has addressed several of our medical gatherings here in S. C.) Editor of the Va. Medical Monthly; T. M. Dye, Secretary from Mississippi; and Miss A. V. Edwards, Secretary of the Virginia Association.

Stanley B. Weld, Editor of the Connecticut State Medical Journal, presided and gave the main address—a scholarly discussion of some of the duties of an editor. The rest of the program will always be somewhat of a nightmare to me for I delivered a paper which I had somehow written. Evidently I stepped on one or two toes for it provoked a good bit of discussion—and this is as much as I could have hoped for.

Billy and I had planned to slip out after the banquet to see what Chicago night life looked like—these small town boys ought to see what is going on in the big city—but it was raining and we were tired, so we contented ourselves with sitting in our room and talking until midnight.

— — — — —

Saturday morning's session began with a paper on Medical Service Plans of the Farm Security Administration by A. M. Simous, Bureau of Med. Economics of the A. M. A. He gave an excellent summary of the work which is being done and warned us that some plan will probably be worked out to furnish medical care for the majority of the farmers in the country—and that we could either cooperate in working out this plan or else expect the Federal Government to work out the plan without our help.

The regular program was interrupted at this point and Brig. General David N. W. Grant was introduced to the conference. (General Grant was the

guest speaker at the banquet of the last annual meeting of our association in Columbia). General Grant had not planned to attend, had no prepared paper but talked informally for a few minutes.

James C. McCann, President of the Mass. Medical Service, discussed Medical Service Plans. His paper and the discussion which followed were extremely enlightening. Medical Service Plans (i. e. providing for the payment of medical services for patients in hospitals) have been tried in various states. These states—California, Michigan, Pennsylvania, Massachusetts, and New Jersey—have blazed the trail in instituting these services. In Michigan, for instance, 455,000 people are now being cared for and 80% of all the physicians in the state are cooperating. There is little doubt that such plans will eventually be established in every state and we owe much to these states which have done the pioneering. They have made mistakes—which they are the first to acknowledge—but it is through these mistakes that we are learning. Billy Smith and I both agreed that it would not be long before South Carolina would see the adoption of some such plan and it behooves us to study the actions of these other states most carefully as we plan for the future.

The final paper was a report of the recent developments in Industrial Health Activities by Carl M. Peterson, Secretary of the Council on Industrial Health of the A. M. A.

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Saturday afternoon we spent loafing and shopping—both Billy and I are husbands and fathers. We roamed through Marshall Fields with its acres of floor space and thousands of customers—and as Billy remarked, "There must be a circus in town, there are so many people here." We ate dinner at the Eitel Rest and then went to a picture, seeing "My Sister Eileen." If you want a good show, particularly when your brain is fagged, don't miss this one.

Sunday we spent on the train. Wingate Johnson, Editor from N. C., was a fellow passenger and the three of us spent the time in conversation and reading. Our train was over three hours late in getting into Washington and we missed our connection. The ticket agent was most courteous and exchanged our pullman berths for a double bedroom. This was Billy's and my first experience with one of these up-to-the-minute rooms and we enjoyed it to the full. The berths ran east and west instead of the usual north and south and this was a little disconcerting so far as sleep was concerned—or at least that was what Billy told me in a sleepy voice as I bade him good-bye at 4:45 A. M.

Monday morning found us back at home—and the work piled up into a little mountain.

J. P. P.

Pathological Conference, Medical College of the State of South Carolina

KENNETH M. LYNCH, M. D., PROFESSOR OF PATHOLOGY

ABSTRACT NO. 471

Student K. H. Herbert (Presenting):

History: 30 year old white man dated the onset of his illness to 13 days prior to final admission, at which time he was seized with chills and fever. He was admitted to a hospital but failed to respond to treatment and went home. The fever persisted, there were occasional chills. Before final re-admission there developed violent, rather constant headaches and a sensation of numbness in left side involving both extremities, the lower more than the upper.

His past history was essentially negative except for several attacks of pneumonia, the date of last attack being several years previous to P. I. There was a vague history of some "heart trouble."

He said that he had lost some weight in the past few weeks.

Physical Examination: T. 102. P. 92. R. 18. B. P. 180/58.

Examination revealed a lean white man of about 30 years with only little evidence of weight loss. severely ill, uncomfortable. Skin hot and dry, otherwise negative. Pupils small; reacted to I. & A; EOM normal; examination of eye grounds unsuccessful. Examination of heart and lungs revealed no abnormalities. Veins of both axillae extending on to abdominal wall, veins in both flanks, some about epigastrium and in lower abdominal quadrant were distended. Peripheral arteries were normal. No abdominal tenderness; spleen not palpated; liver not palpated below costal margin, but there was dullness to percussion 3 cm. below costal margin. Extremities normally developed and symmetrical. He was able to move all extremities at will but experienced some difficulty in placing both left limbs, the lower more than the upper. No edema; no cyanosis. One or two submaxillary glands moderately enlarged, one small node in right axilla; the epitrochlears and inguinal nodes enlarged, and all enlarged nodes were discrete and non-tender. There was some paresthesia in left leg, less so in upper extremity; exact areas of anesthesia were not outlined. There was no involvement of the right side. Reflexes on the left were slightly hyperactive. Babinski sign was negative.

Laboratory:

Urinalyses:

7-25: sl. cloudy; acid; Sp. Gr. 1.006; Occ. f. g. casts.

7-29: sl. cloudy; alk; Sp. Gr. 1.010; no casts.

7-31: clear; acid; Sp. Gr. 1.011; trace albumin. Occ. f. g. c.

8-3: clear; acid; Sp. Gr. 1.015; alb. 1 plus; Occ. wbc.

8-4: clear; acid; Sp. Gr. 1.013; few crystals; 0-1 wbc & rbc.

Blood:

7-25: WBC 20,650; Hgb. 12.2 gms; Polys 92%; Lymphs 7%; Mono. 1%. T & T for malaria negative.

7-26: Widal, Weil-Felix, neg. Agglutinations for Para A & B. Brucella negative.

7-27: Blood culture negative.

7-29: WBC 34,000; Polys 89%; Lymphs. 10%; Mono. 1%.

Spinal Fluid:

7-27: Pressure 100-120 mm. water; appearance—clear; Cell count—37/ cu. mm. Kolmer & Kline negative. Colloidal gold—negative.

Course: He continued to complain of left-sided numbness and generalized discomfort. On the second day of admission he showed some abdominal distention. On the night of the 27th he began to complain of pain in right foot, and on following day there was a bluish spot on dorsum of that foot. He failed to show improvement and at times was irrational and talked at random. On the 29th an examination of right ear showed some retraction of drum and left ear was impacted with wax. Right eye showed large masses of vitreous floats and temporal side of right nerve head was pale; there was a left homonymous hemianopsia; there was engorgement of all retinal vessels and entire fundus was foggy. Left eye showed a few very fine vitreous opacities, and all retinal vessels were engorged. There was edema of both fundi. On 8/3, he developed systolic murmur heard best at aortic area and Corrigan pulse; B. P. 130/50 but diastolic sounds were easily heard at O. He subsequently developed diastolic sounds and a gallop rhythm; B. P. 118/0. On 8-6, the tip of the spleen became palpable and an area of bluish discoloration appeared on left chest about 4 cm. above the nipple. On 8-7, his condition was decidedly worse; there was a very

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rapid pulse and he was cyanotic. He expired at 6:00 P. M., 8-7-42.

Dr. Kredel (Conducting): Mr. Spann, will you give us your interpretation of the case?

Student Spann: We have a young man with sudden onset of disease characterized by fever, and symptoms and signs referable to the heart and central nervous system. The negative agglutination tests help to rule out typhoid, paratyphoid and tularemia as the cause of the fever and blood smears were negative for malaria. The elevated temperature together with the cardiac symptomatology indicate either subacute bacterial endocarditis or rheumatic fever. There were no joint manifestations, so endocarditis seems more likely, particularly since there are other findings which may be explained as embolic phenomena. There were apparently emboli to the brain, kidneys, and spleen. The headaches and irrational state may have been due to a brain abscess. I cannot explain the distended veins. Some blockage of the inferior vena cava or cirrhosis of the liver are possibilities, but there are no other findings to substantiate these conditions. The generalized lymphadenopathy sometimes occurs with a bacteremia.

Dr. Kredel: Do you think it was a primary endocarditis?

Student Spann: Probably not. The infection may have come from an infected ear.

Dr. Kredel: Do you think it was an acute or subacute endocarditis?

Student Spann: Subacute.

Dr. Kredel: Do you think the brain lesion was an abscess or ear infarction due to embolus?

Student Spann: The brain lesion was undoubtedly due to an embolus which if infected probably produced an abscess.

Dr. Kredel: What part of the brain do you think was involved?

Student Spann: The motor tracts are apparently intact, so I believe lesion was in posterior part of the right internal capsule, as indicated by the paraesthesias. The eye symptoms can also be explained by a lesion in this region.

Dr. Kredel: Mr. Talbert, do you agree with what has been said?

Student Talbert: Yes, I agree with the diagnosis of subacute bacterial endocarditis, but believe that patient must have had a previous attack of rheumatic fever, which damaged the aortic valve, or that there was some congenital defect of the aortic cusps. Either of these conditions make the valve more susceptible to infection.

Dr. Kredel: What do you think accounts for the development of the murmurs?

Student Talbert: The valve cusps must have been eroded or so deformed by vegetations that they could not close properly. The diastolic murmur associated with extremely low diastolic blood pressure even suggests a ruptured cusp.

Dr. Kredel: What portion of brain was involved?

Student Talbert: The post central gyms and parietal lobe on right. The optic radiation must have been involved beyond the lateral geniculate bodies because there was no change in the light and accommodation reflexes.

Dr. Kredel: What is the usual course for a case of subacute bacterial endocarditis?

Student Talbert: They usually live for about 4 to 6 months. I think this is a rapid course for this disease, but I think that it still must be classified as subacute as in the acute form death occurs too quickly for such pronounced valvular changes to develop.

Dr. Kredel: Mr. Spann, how long do you believe these patients with subacute bacterial endocarditis live?

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Student Spann: They may live only a few weeks or as long as a year.

Dr. Kredel: Mr. Prystowsky, what is your opinion?

Student Prystowsky: I think that this is most likely an acute bacterial endocarditis and do not agree that the rapidity of the course and the evidence of extensive valvular damage are against this form of the disease, but rather in favor of it.

Dr. Kredel: How do you explain the distended veins?

Student Prystowsky: I have no completely satisfactory explanation, but think that congestive heart failure may be part of the answer.

Dr. Kredel: I saw this case in consultation and felt that this man had one disease that would explain all the findings, namely an endocarditis with embolic phenomena, some of which were apparently septic. I believe that it must have been an acute fulminating process, rather than subacute. I think a lesion in the brain in the temporo-parietal region will explain all the neurologic and eye findings and believe this lesion must have been an abscess.

Dr. Kelley: I would like to ask how long the blood cultures were incubated?

Student Herbert: Two and three days respectively.

Dr. Kelley: It is usually 2 to 3 weeks before positive cultures are obtained, so the time was entirely too short to be conclusive. Of course, it also depends on the type of organism. The subacute variety of endocarditis is usually caused by streptococcus viridans. This would appear to be a much more virulent organism, probably staphylococcus.

Dr. Pratt-Thomas: (Demonstrating gross organs) —Here you see an enlarged heart which shows evidence of an old rheumatic infection, as some of you surmised would be present. The mitral valve cusps are dull grey and opaque and have thickened edges. The chordae tendineae are thickened and shortened. There are brownish-red vegetations on the edges of the posterior cusp. The aortic valve cusp in front of the left coronary ostium is almost completely replaced by vegetations and is ruptured through its center with a pedunculated vegetation 3.5 cm. in length hanging down from its margin. The sinus of Valsalva behind this cusp is also filled by a vegetation. The cusp in front of the right coronary ostium is also involved, but to a less extent. Microscopic sections confirm the gross evidence of old rheumatic involvement and also show areas of acute necrosis which may be part of the generalized septic infection or represent small areas of infarction caused by emboli entering the coronaries from the adjacent vegetations, but this was an embalmed body and positive identification of the organism has not been made. It is certainly a more virulent infection than the usual streptococcus viridans and may be classified as an acute endocarditis,

superimposed on a chronic rheumatic valvulitis.

There were emboli to the brain, spleen, kidneys, liver and foot where the dorsalis pedis artery was completely blocked. Branches of the right middle cerebral artery were occluded and there were areas of suppurative encephalitis as well as bland necrosis which at the level of the rostral part of the pons involved the lateral portion of the thalamus, adjacent internal capsule and extended some distance posteriorly, as well as laterally towards the claustrum. There was purulent exudate in the meninges about the insula.

Dr. R. E. Seibels of Columbia had an exhibit at the Southern Medical Association in Richmond on "Child Welfare and Maternal Mortality" under the auspices of the State Board of Health.

News has been received that Dr. Heyward H. Fouche, a nephew of Dr. James S. Fouche of Columbia, is now serving with the armed forces somewhere overseas. Dr. Heyward Fouche graduated from the Medical College of the State of South Carolina in 1941.

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This volume is made up of fifty-seven papers written by different men. Thirty-three of the articles are listed under Surgery, ten under Aviation and Naval Medicine, and fourteen under General Medicine. Some of the subjects discussed are: War Wounds (Morehead), Brain Injury in War (Foster Kennedy), Gunshot Wounds of the Abdomen (J. W. Davis), Diagnosis and Treatment of Secondary Shock (Kekwick, Maycock, Marriott, and Whitley of the Medical Corps, British Armed Forces), Principles of Aviation Medicine (Alvan L. Baruch), Fatigue in Aircraft Pilots (R. A. McFarland), The Nutrition of the Soldier (Epstein), Painful Feet (Frankel and Funsten), Chigger and Jigger Bites (Weigel) and Malingering (Hulett).

As stated on the title page, this book is a symposium. It is not a well organized textbook. The articles were written as integral units and do not dovetail into each other as is the case with many volumes which present the writings of various authors. As a result, there is a certain overlapping of subject matter discussed and there is occasional difference of opinion as to methods of treatment. These factors, however, appear to the reviewer as advantages, rather than disadvantages. There is so much in medicine that is still debatable that it is refreshing to hear separate discussions of the same general subject by different men.

To any physician who is interested in the problems of War Medicine—and many of these problems are also met with in civilian practice—this volume presents a cross section of the best which has been written in this field.

The one drawback to the book is the lack of an index (and it is hoped this will be remedied in any subsequent editions.)

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SOCIETY REPORTS

Medical Society of South Carolina (Charleston). At the meeting on October 27th, the scientific program consisted of a paper by Dr. Robert Wilson, Jr. on Acute Hemolytic Anemia in Fertilizer Workers.

At the meeting on November 10th, Dr. Frederick E. Kredel presented a paper on Surgical Treatment of Cerebral Thrombosis with presentation of a case.

Greenville County Medical Society. The guest speaker at the November meeting of the Society was Dr. Frederick E. Kredel, Professor of Surgery at the Medical College of the State of South Carolina, Charleston, S. C., and his subject was Surgical Treatment of Cerebral Thrombosis. Dr. Mordecai Nachman was the local speaker and presented a case report on Chemical Dissolution of Kidney Stones.

Columbia Medical Society. The regular meeting of the Society was held on November 9th, at the Columbia Hotel. A symposium on medical and material aspects of chemical warfare was presented by the following: Dr. H. G. Smithy, Associate Surgeon, Medical College of the State of South Carolina, Dr. G. S. T. Peeples, South Carolina State Board of Health, and Lt. Col. Paul S. Woodward, Chief Chemical Warfare Property Officer, Fort Jackson, S. C.

Florence County Medical Society. At the meeting on November 19th, the motion picture "Peptic Ulcer," a color film with sound,

prepared under the direction of Dr. Everett D. Kiefer, Department of Gastroenterology, The Lahey Clinic, Boston, was shown. This film was made possible by a grant from John Wyeth & Brother, Incorporated.

DEATHS

Dr. Cephas Cole Hill, 64, died at the McLeod Infirmary, Florence, S. C. on November 8th, after a long illness. Dr. Hill graduated from the University of Maryland in 1904, served his internship at Johns Hopkins Hospital and then began practicing medicine in Darlington, South Carolina where he practiced until he became too ill. He is survived by his widow and one daughter.

Dr. B. Lawton Harris, 70, died at his home in St. Charles on November 5th, following a short illness. Dr. Harris graduated from Vanderbilt University in 1897 and had practiced medicine in Sumter and Lee Counties until recent years. Surviving are his widow and three daughters.

Dr. Herbert U. Seabrook, 56, died at his home in Charleston on November 17. After graduating in medicine from the University of Western Tennessee, Dr. Seabrook studied tropical fevers in South America for a number of years. He had practiced medicine in Charleston for twenty-six years prior to his death. He is survived by his widow and one son.

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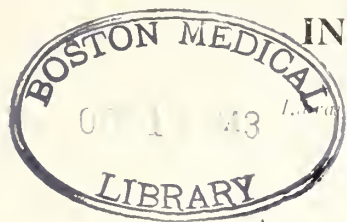
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